



SCHOOL OF ENGINEERING

SOE-BULLETIN

The Official Newsletter of **School of Engineering**



SCHOOL OF ENGINEERING

Vision

Transform lives through excellence in engineering education, research and innovation with an emphasis on sustainability, inclusive technologies and global needs.

Mission

1.Design and deliver contemporary engineering curricula to address regional and global needs while emphasizing ethics, values, integrity and regional relevance. 2.Carryout high impact academic research, industry projects and innovation activities with active student engagement to advance science and engineering knowledge and state-of-the- art industry practices. 3.Develop regional and national leaders to advance the society and economy.

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LaTeX – Fundamentals: Crafting Research Articles, Presentations and Reports

The Department of Computer Science and Engineering, School of Engineering, Dayananda Sagar University, organized a three-day workshop on “LaTeX – Fundamentals: Crafting Research Articles, Presentations and Reports” from 24–26 March 2026 for 4th semester CSE students.

The workshop was conducted by Dr. Savitha Hiremath, Associate Professor, DSU, who introduced participants to LaTeX, its importance in academic writing, and its practical applications. The sessions covered document structuring, use of Overleaf, creation of sections, figures, tables, lists, equations, bibliography, and presentation design using LaTeX (Beamer).

The workshop was interactive and hands-on, enabling students to gain practical experience in preparing research documents, reports, and presentations using LaTeX.

Resource Person: Dr. Savitha Hiremath, Associate Professor, Dept. of CSE.

Faculty Coordinators: Dr. Rajesh T.M, Associate Professor and Chairperson, Dept. of CSME; Dr. Renukadevi, Assistant Professor, Dept. of CSE; Dr. Ramesh, Professor, Dept. of CSE.

Student Coordinators: Arpita Ghetiya – 4th Semester, Dept. of CSE; Sravya P Yeshmala – 4th Semester, Dept. of CSE; Madiha Khan – 4th Semester, Dept. of CSE.

SCHOOL OF ENGINEERING
DAYANANDA SAGAR UNIVERSITY
Devarakogalhalli, Horshalli Kamakuru Road,
Bangalore South District, Karnataka 562112

INSTITUTION'S INNOVATION COUNCIL

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

3 DAYS WORKSHOP ON
LATEX FUNDAMENTALS:
CRAFTING RESEARCH ARTICLES,
PRESENTATIONS AND REPORTS.

OBJECTIVES

- Learn benefits over traditional word processors.
- Document structure and formatting.
- Include and format images, graphs, and figures.
- Create and customize tables.
- Typical equations, symbols.
- Handling References and Citations.
- Create presentations with Beamer slide.

RESOURCE PERSON
Dr. Savitha Hiremath,
Associate Professor,
Department of CSE

CONVENERS
Dr. Udiga Kumar Roddy K R
(Dean – Jt. CSE)
Dr. Girish Q S
Professor & Chairperson
Dept. of CSE, DSU
Dr. Rajesh T. M
Associate Professor & Chairperson,
Dept. of CSME

FACULTY COORDINATORS
Dr. Renukadevi M N
Assistant Professor, Dept. of CSE
Dr. Ramesh
Professor, Dept. of CSE

STUDENT COORDINATORS
Arpita Ghetiya
09742935224, 4th sem, CSE
Sravya P Yeshmala
093482 32217, 4th sem, CSE
Madiha Khan
083629 94295, 4th sem, CSE

SCHEDULE
Date: 24, 25 and 26 March, 2026
Time: During Technical Writing class hours
Venue: L402

INSTRUCTIONS

- Please carry your laptops, it is a hands-on session.
- Registered students must attend the workshop without fail.



Three-Day Hands-on Workshop on Internet of Things (IoT)

The Department of Computer Science and Engineering (Data Science), Dayananda Sagar University organized a three-day hands-on workshop on Internet of Things (IoT) from 2nd to 4th February 2026 at LH-1, School of Engineering, in association with the DS Club and IEEE Club.

The workshop was coordinated by Dr. Santhosh Kumar G, Dr. U. Pavan Kumar, Prof. Prapti Bhattacharjee, and Prof. Kishor Malakar, and was conducted by Mr. Harish N (Co-founder & CTO) and Mr. Mahesh Deginal (MD & CEO) from Karunadu Technologies.

Around 180 students from 4th Semester (Sections A, B, and C) actively participated. The workshop focused on IoT architecture, sensors, communication protocols, and real-time applications through hands-on sessions. Students gained practical experience in hardware integration, cloud connectivity, and simulation by developing applications such as traffic light systems and obstacle detection using buzzers. The program significantly enhanced students' practical skills and confidence in building IoT-based solutions.

accelerometer
Dayananda Sagar University
Organized by the Department of CSE (Data Science)

Three Days Complete Hands-On
WORKSHOP
ON
INTERNET OF THINGS
(IOT)

ultrasonic sensor
8-channel relay module
LCD display

Mahesh Deginal
MD & CEO
Karunadu Technologies

Harish N
Co-founder & CTO
Karunadu Technologies

Chief Patrons:
Dr. B.S Sathyanarayana
Vice Chancellor
Dr. Prakash Sheelvanmath
Pro-Vice Chancellor
Dr. Puttamadappa C
Registrar
Dr. Udaya Kumar Reddy K R
Dean, SoE
Dr. Shaila S G
Chairperson, Dept. Of CSE (DS)

DATE:
2, 3 and 4 March 2026

VENUE: LH 1

Faculty Coordinators
Dr. Santhosh Kumar G
Dr. U. Pavan Kumar
Prof. Prapti Bhattacharjee
Prof. Kishor Malakar

Student Organisers
Liketh B
Pratham Kolhar



Panel Discussion on “From Campus to Corporate: AI’s Role in Shaping Future Talent”

The Department of CSE (AI & ML), School of Engineering, Dayananda Sagar University, organized a panel discussion titled “From Campus to Corporate: AI’s Role in Shaping Future Talent” on 6th March 2026. The session focused on the role of Artificial Intelligence in shaping career opportunities, required skill sets, and industry expectations.

The event began with an address by Dr. Jayavrinda Vrindavanam, followed by an insightful discussion featuring panelists Samraat Pattanayak (Cognizant), Shohini Ghosh (Meraki People), and senior faculty members Dr. Natarajan, Dr. Basavaraj, Dr. Hanumanth Sastry, and Dr. Prateek Verma. Student panelists from the 4th and 6th semesters—Safwan Mohiddin Shaikh, Sinchana Benakatti, Prachi Patel, Pratham R, K M Brijesh Vas, R. Niharika Trivedi, Rishabh R. Soraganvi, Nabeela Javed, Yisol Choi, and Sankalp Khadabadi—also shared their perspectives.

The session was moderated by Dr. Ankita Thakkar, ensuring an engaging and student-centric discussion. It concluded with an interactive Q&A session, followed by a vote of thanks by Dr. Ankita Thakkar. The event was coordinated by Dr. Ankita Thakkar and Dr. Sugandha Saxena, successfully bridging the gap between academia and industry while offering valuable insights into AI-driven career pathways.

Department of CSE (Artificial Intelligence & Machine Learning)
Panel Discussion
From Campus to Corporate - AI's Role in Shaping Future Talent

6th March, 2026
 10:30 AM - 12:00 PM
 Venue - LH1

Panelists

Samraat Pattanayak
 Manager (AI & Analytics), Cognizant

Shohini Ghosh
 Co-Founder and Partner - Thrive Together An AI Based Startup

Chief Guests:
 Dr. Hemachandra Sagar, Chancellor, DSU
 Dr. Prakash S, Pro Vice-Chancellor, DSU
 Dr. Paramachandra Sagar, Pro-Chancellor, DSU

Panelists:
 Dr. B.S. Salyanarayana, Vice-Chancellor, DSU
 Dr. Prakash S, Pro Vice-Chancellor, DSU
 Dr. Puthannaiah, Registrar, DSU
 Dr. Dibyakumar Reddy, Dean, SOE, DSU

Convener:
 Dr. Jayavrinda Vrindavanam, Professor & Chairperson, CSE (AI & ML), DSU

Faculty Coordinator:
 Dr. Ankita Thakkar, Assistant Professor, CSE (AI & ML)
 Dr. Sugandha Saxena, Assistant Professor, CSE (AI & ML)

Student Coordinator:
 Nabeela Javed, ENUGSAM0260



Two-Day Workshop on “Full Stack Web Development”

The Department of CSE (AI & ML), School of Engineering, Dayananda Sagar University, successfully organized a two-day workshop on “Full Stack Web Development” on 27–28 March 2026. The workshop emphasized the growing importance of web development in modern careers, along with essential technical skills and evolving industry expectations. The event commenced with an inaugural address by Dr. Jayavrinda Vrindavanam, who highlighted the relevance of full stack development in today’s digital era.

The sessions were conducted by resource person Mr. Udhaya Kumar T, along with the Full Stack subject handling faculty members, who provided hands-on guidance and practical exposure to various web development technologies. Student coordinators from the 4th semester—Achinth M and Manish—actively contributed to the smooth execution of the workshop and shared their perspectives throughout the sessions.

The workshop was effectively moderated by Dr. Sugandha Saxena, with coordination by Prof. Bhuvana Mohini, Prof. Nievtha R, Prof. Soheli Chakraborty, Prof. Pragnya Mishra, and Prof. Upasana Shil. The sessions included practical demonstrations, guided exercises, and an interactive Q&A segment. The event concluded with a vote of thanks by Dr. Sugandha Saxena, successfully bridging the gap between academic learning and industry requirements.



INNOVATEX: Startup Workshop

The Department of Computer Science and Technology successfully conducted INNOVATEX: Startup Workshop on 26th March 2026, with the objective of fostering entrepreneurial thinking, innovation, and startup culture among students.

The session was delivered by Mr. Pratik R. Belavanki, who shared valuable insights into startup ecosystems, innovation strategies, and entrepreneurial journeys. The workshop covered key aspects such as startup fundamentals, idea validation, business model development, and real-world case studies.

Students were also guided on practical aspects including startup initiation, MCA portal registration, funding opportunities, pitching strategies, and scaling businesses. An interactive Q&A session further enriched the learning experience.

The event witnessed active participation from over 70 students, encouraging creativity, problem-solving, and a strong inclination towards entrepreneurship.



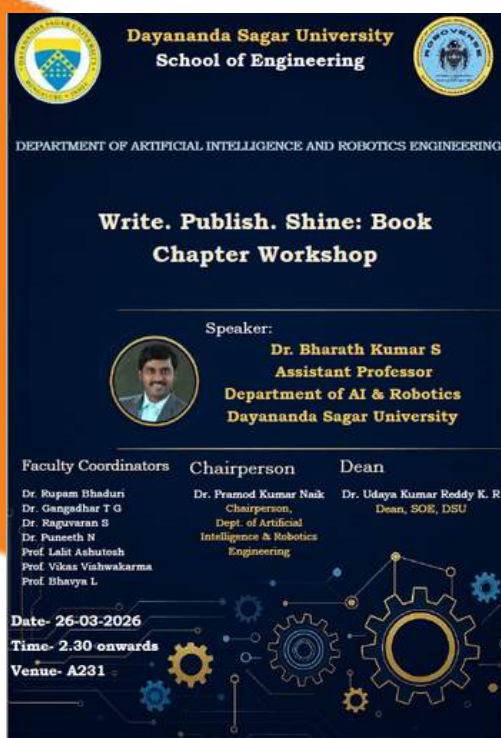
Write. Publish. Shine: Book Chapter Workshop 2026

The “Write. Publish. Shine: Book Chapter Workshop 2026”, organized by the Department of Artificial Intelligence and Robotics Engineering, School of Engineering, Dayananda Sagar University, was held on 26 March 2026 at 2:30 PM in Room No. A231. The session was conducted by Dr. Bharath Kumar S, Assistant Professor, who guided students on writing, structuring, and publishing academic book chapters.

The workshop covered key aspects such as identifying research topics, structuring chapters (abstract, introduction, literature review, methodology, results, and conclusion), maintaining academic integrity, and proper citation practices. It also highlighted publisher expectations, the peer-review process, and strategies to improve publication success.

An interactive session allowed participants to clarify doubts and gain practical insights. The event was coordinated by Dr. Rupam Bhaduri, Dr. Gangadhar T G, Dr. Raguvaran S, Dr. Puneeth N, Prof. Lalit Ashutosh, Prof. Vikas Vishwakarma, and Prof. Bhavya L under the leadership of Chairperson Dr. Pramod Kumar Naik.

Overall, the workshop was informative and helped students understand the process of academic writing and publishing, encouraging research and innovation.



Dayananda Sagar University
School of Engineering

DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND ROBOTICS ENGINEERING

Write. Publish. Shine: Book Chapter Workshop

Speaker:
Dr. Bharath Kumar S
Assistant Professor
Department of AI & Robotics
Dayananda Sagar University

Faculty Coordinators
Dr. Rupam Bhaduri
Dr. Gangadhar T G
Dr. Raguvaran S
Dr. Puneeth N
Prof. Lalit Ashutosh
Prof. Vikas Vishwakarma
Prof. Bhavya L

Chairperson
Dr. Pramod Kumar Naik
Chairperson,
Dept. of Artificial
Intelligence & Robotics
Engineering

Dean
Dr. Udaya Kumar Reddy K. R.
Dean, SOE, DSU

Date- 26-03-2026
Time- 2.30 onwards
Venue- A231



Director of Marketing & Sales - IEEE Computer Society

The Department of Computer Science & Engineering, School of Engineering, Dayananda Sagar University, organized a distinguished talk under the IEEE Computer Society Student Branch on 24 February 2026 at 2 PM in A Block. The session featured Ms. Michelle Tubb, Director of Marketing & Sales, IEEE Computer Society, as the Distinguished Speaker.

She shared insights on global opportunities, professional growth, and IEEE's role in shaping technology careers, emphasizing industry engagement and leadership. Mr. Pramod Kumar, Senior Manager (Education), IEEE, highlighted certification opportunities in SWEBOK 4.0 to enhance industry readiness.

The session was interactive, with active participation from students and faculty. The event was conducted under the guidance of Dr. Udaya Kumar Reddy K R, Dean, SOE, and Dr. Girisha G S, Chairperson, CSE.

Faculty Coordinators: Dr. Basavaraj N Hiremath, Faculty Advisor, IEEE CS; Dr. Savitha Hiremath, IEEE CS Student Members.



SCHOOL OF ENGINEERING INSTITUTIONS INSPECTION BOARD

DAYANANDA SAGAR UNIVERSITY
Devarakaggalahalli, Harohalli, Kanakapura Road, Bengaluru South District - 562112, Karnataka, India

SCHOOL OF ENGINEERING
Department of Computer Science & Engineering

IEEE COMPUTER SOCIETY

Distinguished Speaker
Michelle Tubb
Director of Marketing & Sales - IEEE Computer Society

Date: 24th February 2026.
Time: 2 PM
Venue: 5th floor, A block

Convenors
Dr. Udaya Kumar Reddy K R, Dean, SOE, DSU
Dr. Girisha G S, Chairperson, CSE

Branch Counselor
Dr. Pushpa Mala S,
IEEE Student Branch Counselor, Dayananda Sagar University

Student Coordinators
IEEE CS Student Members

Faculty Coordinators
Dr. Basavaraj N Hiremath, Faculty Advisor, IEEE CS
Dr. Savitha Hiremath, IEEE CS Member

Expert Lecture on Writing Effective Research Proposals for Funding Agencies

The Department of Computer Science and Engineering, School of Engineering, Dayananda Sagar University, organized an online guest lecture on “Writing Effective Research Proposals for Funding Agencies” on 7 March 2026 at 10:00 AM, aimed at enhancing the research capabilities of faculty members.

The session was delivered by Dr. Sitharthan R, an academician and researcher from Vellore Institute of Technology, Vellore. He shared valuable insights into proposal writing techniques, funding opportunities, and strategic planning for successful grant acquisition.

The lecture covered key aspects such as identifying research gaps, defining clear objectives, structuring proposals as per funding agency requirements, and understanding evaluation criteria like innovation, feasibility, and impact. Common mistakes in proposal writing and practical strategies for improving success rates were also discussed.

The session was interactive and encouraged active participation, enabling faculty members to gain practical knowledge and confidence in pursuing funded research projects.

Faculty Coordinator: Dr. K. Vengatesan, Professor, Dept. of CSE.

The poster is for an online expert lecture organized by the Department of Computer Science and Engineering at Dayananda Sagar University. It features the university's logo, the School of Engineering name, and the Department of Computer Science and Engineering. The event is titled "Expert Lecture on Writing Effective Research Proposals for Funding Agencies" and is scheduled for 07.03.2026 at 10.00 AM. The resource person is Dr. Sitharthan R, an Associate Professor at Vellore Institute of Technology. The poster also lists the convenors, Dr. Udaya Kumar Reddy and Dr. Girisha G.S., and the faculty coordinators, Dr. K. Vengatesan and Dr. Rupam Bhagawati. The background of the poster shows a large, ornate building, likely the main campus of Dayananda Sagar University.

DAYANANDA SAGAR UNIVERSITY
School Of Engineering
Devarakaggalibelli, Harohalli, Kanakapura Road, Bangalore South Dt - 562112
Department of Computer Science and Engineering

Organizing
Expert Lecture **ONLINE**
on
Writing Effective Research Proposals for Funding Agencies

Date & Time :
07.03.2026, 10.00 AM

Convenors: Dr. Udaya Kumar Reddy,
Dean of SOE-DSU
Dr. Girisha G.S, Chairman CSE-DSU

Resource Person : Dr. Sitharthan R
Associate Professor - Grade2
Vellore Institute of Technology (VIT),
Vellore

Faculty Coordinators:
Dr. K.Vengatesan, Professor
Dr. Rupam Bhagawati, Associate Professor
CSE Dept.

Expert Talk on “AI Skills for High-Package Tech Careers: Guidance from Industry Experts”

The Department of Computer Science and Engineering (Data Science), School of Engineering, Dayananda Sagar University organized an expert talk on “AI Skills for High-Package Tech Careers: Guidance from Industry Experts” on 27th March 2026 at SOE – A Block, LH-3.

The session featured distinguished industry experts Mr. Keerthi Vasan K (Software Engineer II, Microsoft) and Ms. Malarvizhi Saravanan (Senior AI/ML Engineer, Adobe), who shared valuable insights into current industry trends and career opportunities in Artificial Intelligence.

The session focused on in-demand AI skills, industry expectations, and strategies to secure high-package roles in the tech industry. Students actively participated and gained practical guidance on career planning, skill development, and industry readiness. The talk served as a platform to bridge the gap between academic learning and industry requirements, motivating students to pursue excellence in AI and related domains.



Springer Open Access briefing session

The Department of CSE (AI & ML) organized a Springer Open Access briefing session on 10th March 2026. The session was delivered by Dr. Arunkumar Gopu, Associate Professor & Assistant Dean (Research & Innovation). The session provided valuable insights into Springer's Open Access publishing model, emphasizing its benefits, publication process, and the importance of increasing research visibility and impact.

Faculty members actively participated in the session and gained a better understanding of open access publishing practices, which are essential for effective dissemination of research at a global level.



Seminar on “From Idea to Reality: Master the Art of Prototype Building in Product Development”

The Department of CSE (AI & DS), School of Engineering, Dayananda Sagar University, organized a seminar on “From Idea to Reality: Master the Art of Prototype Building in Product Development” on 9th March 2026. The session by Dr. K. Sudheendra Rao provided valuable insights into prototyping techniques and transforming ideas into functional products.

The event witnessed active student participation and was successfully coordinated by Prof. Pavani Vittapalli and Dr. Ramesh Wadawadagi, under the guidance of Chairperson Dr. Poongodi T.

DAYANANDA SAGAR UNIVERSITY
SCHOOL OF ENGINEERING
Devarakagganahalli, Harohalli, Kanakapura Road, Bengaluru South District-562112, Karnataka

DAYANANDA SAGAR UNIVERSITY
SCHOOL OF ENGINEERING
Department of Computer Science and Engineering
(ARTIFICIAL INTELLIGENCE AND DATA SCIENCE)
Seminar on "From Idea to Reality:
Master the Art of Prototype Building in Product Development"

Date & Time
9th March 2026
2:45 P.M. to 4:00 P.M.

Venue:
Lecture Hall-2,
SOE

Objectives
1.Understand the Role of Prototyping in Product Development
2.Translate Ideas into Structured Design Concepts
3.Apply Rapid Prototyping Techniques and Tools
4.Evaluate and Iterate Based on Testing and Feedback
5.Optimize Cost, Time, and Resources in Prototype Development

Resource Person:

Dr.K.Sudheendra Rao
Associate Professor
Dept. of ECE,DSU

Outcomes
1. Demonstrate the ability to convert a conceptual idea into a functional prototype
2. Develop low- and high-fidelity prototypes
3. Conduct prototype testing and validation
4. Implement iterative improvements

Faculty Coordinators
Prof. Pavani Vittapalli, Assistant Professor
Dr. Ramesh Wadawadagi, Associate Professor

Patrons
Dr. B S Satyanarayana, Vice Chancellor, DSU
Dr. S Prakash, Pro Vice Chancellor, DSU
Dr. E N Ganesh, Pro Vice Chancellor, DSU
Prof. R Janardhan, Pro Vice Chancellor, DSU
Dr. Puttamadappa C, Registrar, DSU
Dr. Udava Kumar Reddy K R, Dean, SOE, DSU

Convenor
Dr. Poongodi T, Chairperson CSE(AI &DS), DSU

Student Coordinators
BHOOMIKA K , 4TH SEM ,CSE, (AI&DS), DSU
RUTHI NAMBURI, 4th Sem, CSE, (AI&DS), DSU
MOHIT DEOKAR, 4th Sem, CSE, (AI&DS), DSU
SIDDHARTH TEMBUGADE, 4th Sem. CSE. (AI&DS), DSU



Alumni Insights: Tech Skills for Career Progression

The Department of Computer Science and Technology organized an alumni talk titled “Career Progression with Tech Cracks: Essential Technical Skills and Industry-Driven Learning” on 28th February 2026 for 6th-semester CST students.

The session was delivered by Ms. Sohana R, Software Engineer at Jones Lang LaSalle (JLL), who provided valuable insights into career planning and the diverse opportunities available after graduation. She emphasized the importance of building strong technical skills, learning modern technology stacks, and staying updated with emerging industry tools to remain competitive in the evolving tech landscape.

The poster includes logos for Dayananda Sagar University, School of Engineering, Institution's Innovation Council, and DSUAC. It features a QR code for registration and a list of organizers and conveners.

"CAREER PROGRESSION WITH TECH CRACKS: ESSENTIAL TECHNICAL SKILLS AND INDUSTRY-DRIVEN LEARNING"

ALUMNI TALK

Organized by
Department of
Computer Science & Technology

Ms. Sohana R
Software Engineer
Jones Lang LaSalle (JLL)

JLL

Scan here to register

28.02.2026

09:30am to 10:30am

Venue
A327, 3rd Floor,
SoE, DSU

Target Audience
Pre-Final Year Students

This is your opportunity to:

- Highlighting industry-relevant technical skills.
- Guiding students on effective upskilling.
- Introducing impactful certifications.
- Offering practical insights to bridge the gap between academics and industry.

Organizers

Dr. Ramandeep Kaur,
Prof. Yashaswini B V,
Prof. Saransh Gupta
Assistant Professors, CST

Conveners

Dr. Udaya Kumar Reddy K R
Dean, SoE, DSU
Dr. M Shahina Parveen
Chairperson, CST



Expert Lecture on Fundamentals of Geometrical Dimensioning & Tolerances and Career in Aerospace.

On 27th March 2026, the Department of Aerospace Engineering at Dayananda Sagar University organized an industrial expert lecture on “Fundamentals of Geometrical Dimensioning & Tolerances and Careers in Aerospace Engineering” for the IV and VI semester students. The session was delivered by esteemed industry experts, Mr. Sasikumar Bojan and Mr. Aditya Shivaprasad from Airbus.

The lecture provided students with valuable insights into the application of Geometrical Dimensioning and Tolerancing (GD&T) within the aerospace domain, emphasizing its importance in design precision and manufacturing standards. Additionally, the speakers shared their professional experiences and offered guidance on career opportunities, industry expectations, and skill development in aerospace engineering.

The session was highly informative and enabled students to gain practical knowledge along with a broader perspective on career pathways in the aerospace sector.

DAYANANDA SAGAR UNIVERSITY NAAC GRADE A+ SCHOOL OF ENGINEERING

>>> DEPT OF AEROSPACE ENGINEERING
EXPERT LECTURE
FUNDAMENTALS OF GEOMETRIC DIMENSIONING AND TOLERANCES & CAREER IN AEROSPACE

SPEAKERS


Aditya Shivaprasad
Engineer-Airbus


Sasi Kumar Bojan
Engineer-Airbus

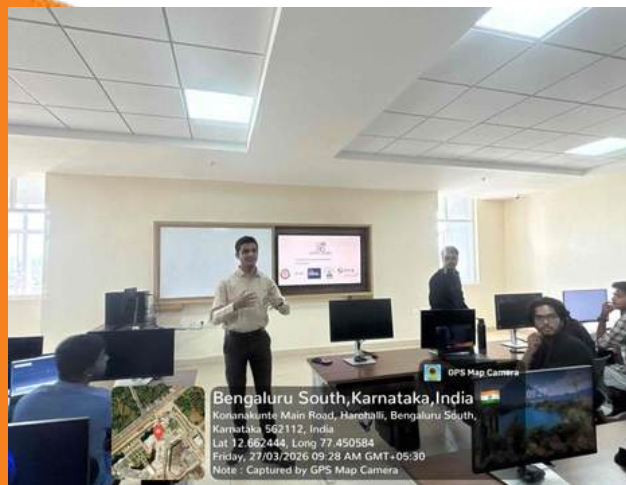
ABOUT THE SPEAKERS

>>> Aditya Shivaprasad is a mechanical engineer with 10 years of experience in the aerospace industry and currently works as an engineer at Airbus. A passionate traveller and foodie, he enjoys exploring new cultures and cuisines and is also an active public speaker who believes in giving back to society.

>>> Sasi Kumar Bojan is a Mechanical Engineer with 9+ years of experience in GD&T and Tolerance Stack-up Analysis for both automobile and aircraft products. He is currently working at Airbus as an Engineer, actively involved in aerospace design and engineering.

GUEST LECTURE ON
27 MARCH
2026

VENUE - LH_2
TIMINGS - 10:30 ONWARDS



ENTREPRENEURSHIP CELL ACHIEVEMENT 2026

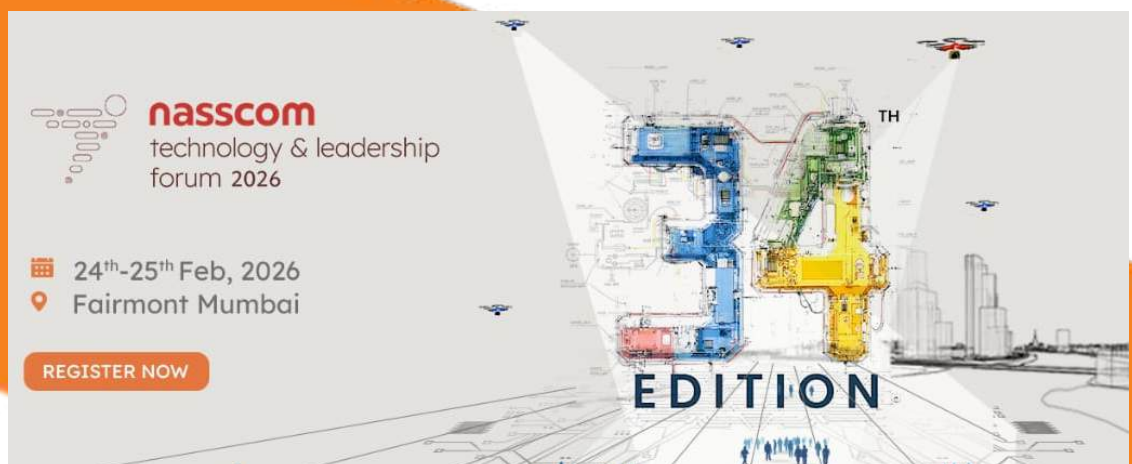
The Department of Computer Science & Engineering, School of Engineering, Dayananda Sagar University organized an Entrepreneurship Cell (E-cell) startup event for FLORIX SMRT INFRA SOLUTIONS PVT. LIMITED at Fairmont Mumbai on 24–25 February 2026. Founded by Mr. Rajavarman and his team, the startup participated in the NASSCOM Technology & Leadership Forum 2026, a leading platform for technology leaders and policymakers.

The team showcased their Energy Harvesting Smart Hexagonal Tile, gaining exposure to industry experts and exploring opportunities for commercialization and partnerships. Interactions with Vice Presidents, CTOs, Directors, and policymakers from over 30 organizations provided valuable insights into market readiness and real-world applications.

The team thanks Dr. Sridhar SK, Dr. Girisha G S, Dr. Uday Kumar Reddy K R, and the Management of Dayananda Sagar University for their support.

Faculty Coordinator:

Dr. Sridhar SK, E-cell SPoC, Associate Professor, Department of CSE



LA CASA DE CODE- 24 Hours Internal Hackathon

The Department of Computer Science and Engineering, School of Engineering, Dayananda Sagar University, along with DSU ACM Student Chapter, organized a 24-hour internal hackathon on February 27th and 28th, 2026. It was an on-campus offline event where shortlisted teams built working prototypes based on their ideas and presented them to a jury.

The DSU Internal Hackathon aimed to identify and nurture innovators who will represent DSU at the TechFlix National Level Hackathon. Students worked in teams to develop solutions for real-world problems across three tracks: AI in Healthcare & Agriculture, Web3 & Blockchain, and Open Innovation.

Evaluation was based on innovation, technical implementation, feasibility, scalability, presentation, and overall impact. The event provided a strong platform for students to showcase creativity, problem-solving skills, and technical expertise.

Event Coordinator:

Dr. Meenakshi Malhotra, Associate Professor, CSE Department

DAYANANDA SAGAR UNIVERSITY
HAROHALLI, KANAKAPURA ROAD, SOUTH BENGALURU - 562112

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING PRESENTS

LA CASA DE CODE
24 HOURS INTERNAL HACKATHON

YOUR TICKET TO
TECHFLIX SEASON 2

27TH - 28TH FEBRUARY 2026
1:30 PM ONWARDS
A BLOCK DSU MAIN CAMPUS

20K PRIZE POOL
Limited Teams Only
Exclusive to DSU Students
Top 10 Teams Selected for
Techflix - National Level
Hackathon

700 PER TEAM

Chief Patrons:
Dr. B. Venkatesh Reddy, Director, DSU
Dr. D. Premachandran Sagar, Pro-Chancellor, DSU

Convener:
Dr. Suresh Kumar Reddy, Dean, S&E
Dr. Girish K. S., Professor & Chairperson, CSE
Dr. Sathish Kumar, Prof., Professor & Associate Dean, CSE
Dr. Reshmi V., Associate Professor & Associate Chair

Faculty Coordinator:
Dr. Meenakshi Malhotra, Associate Prof., CSE
Dr. Manjunath, ACM Faculty Coordinator, Associate Prof., CSE
Dr. Srinivas Reddy, Prof., CSE
Dr. Venkatesh D.S., Prof., CSE
Dr. Praveen, Prof., CSE
Dr. Anand, Prof., CSE
Dr. Anand, Prof., CSE
Dr. Anand, Prof., CSE
Dr. Anand, Prof., CSE

Student Coordinators:
Shreeya, Prof., CSE
Aditya, Prof., CSE



From Quantum Physics to Quantum Computing: An Interdisciplinary Journey

The Department of Computer Science and Engineering, School of Engineering, Dayananda Sagar University, in association with the IEEE Computer Society and the Data Analytics and Visualization Club, organized an insightful session titled “From Quantum Physics to Quantum Computing: An Interdisciplinary Journey” on 11th March.

The session featured Dr. Vidhyadhiraja N. S., Professor at the Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), Bengaluru, as the distinguished speaker. The program was convened by Dr. Udaya Kumar Reddy K R, Dean, SOE, and Dr. Girisha G S, Chairperson, Department of CSE. The event was coordinated by Dr. Basavaraj N. Hiremath, Faculty Advisor, IEEE CS, and Dr. Savitha Hiremath, IEEE CS Member, with the active support of IEEE CS student members.

During the session, Dr. Vidhyadhiraja N. S. provided an engaging overview of the fundamental principles of quantum computing, explaining how concepts from quantum physics form the foundation for next-generation computing technologies. He introduced key ideas such as quantum bits (qubits), superposition, entanglement, and quantum parallelism, highlighting how these principles enable quantum computers to solve certain complex problems more efficiently than classical computers.



From Equality to Excellence: Celebrating Women Innovators in Computer Science

Department of Computer Science and Engineering, School of Engineering, Dayananda Sagar University, in collaboration with the IEEE Computer Society, successfully organized an event titled “From Equality to Excellence: Celebrating Women Innovators in Computer Science” on 10th March 2026.

The event was conducted with the objective of promoting awareness about gender equality and recognizing the contributions of women in the field of technology. The program was convened by Dr. Udaya Kumar Reddy K R, Dean, SOE, and Dr. Girisha G S, Chairperson, Department of CSE. The event was coordinated by faculty members Dr. Basavaraj N. Hiremath, Faculty Advisor, IEEE Computer Society, Dr. Savitha Hiremath, Prof. Nandini K, Prof. Shilpa Sudheendran, and Prof. Kavyashree I. Pattan, along with the active support of IEEE CS student coordinators, including Sanjana R. G and Rahila M. S.

The program featured engaging activities, including a Quiz on Women Achievers in Technology and an On-the-Spot Talk on Gender Equality. Participants enthusiastically shared their perspectives on gender equality by participating in the On-the-Spot Talk and highlighted inspiring contributions made by women in computer science and related fields by taking Quiz.



DAYANANDA SAGAR UNIVERSITY
Devarakagalahalli, Harohalli, Kanakapura Road, Bengaluru South District - 562112, Karnataka, India

School of Engineering
Department of Computer Science & Engineering
From Equality to Excellence:
Celebrating Women Innovators in Computer Science

• **Scan for Registration:** **Date: 10th March 2026.**
Time: 2:00 PM to 4:00 PM
Venue: LH 3, A block, SOE

Program Highlights:

- Quiz on Women Achievers in technology
- On the spot Talk on Gender Equality

All faculty and students of CSE are Welcome

Convenors
Dr. Udaya Kumar Reddy K R, Dean, SOE, DSU
Dr. Girisha G S, Chairperson, CSE

Faculty Coordinators
Dr. Basavaraj N Hiremath, Faculty Advisor, IEEE CS
Dr. Savitha Hiremath, IEEE CS Member
Prof. Nandini K, Asst. Prof., Dept of CSE
Prof. Shilpa Sudheendran, Asst. Prof., Dept of CSE
Prof. Kavyashree I Pattan, Asst. Prof., Dept of CSE

Branch Counselor

Prizes for winning participants

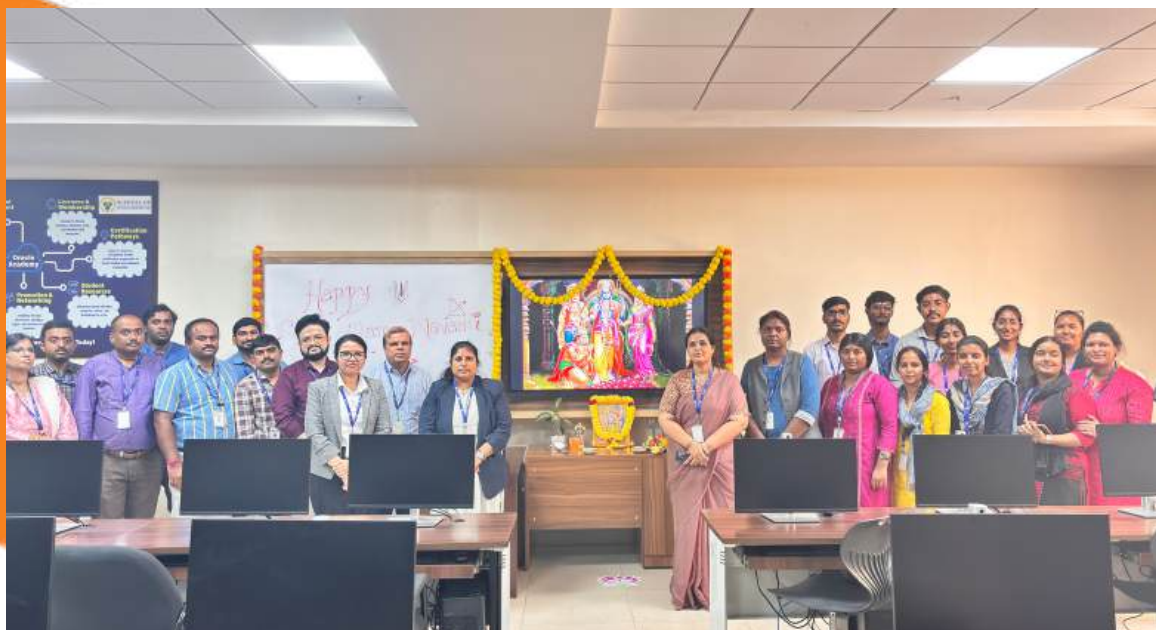
Student Coordinators



Shree Rama Navami Celebration

The Department of Computer Science and Engineering (Data Science), Dayananda Sagar University organized a Shree Rama Navami celebration on 27th March 2026 at Lab 411, School of Engineering. The event was conducted to mark the auspicious occasion and to promote cultural values and unity among faculty and students.

Faculty members and students actively participated in the celebration, making the event meaningful and spiritually enriching. The program provided an opportunity for interaction and togetherness, fostering a positive and harmonious environment within the department.



Parent Teacher Meeting

The Department of CSE (AI & ML) successfully conducted a Parent-Teacher Meeting for the 4th, 6th, and 8th semester students on 28th March 2026. The meeting aimed to strengthen communication between parents and faculty while discussing students' academic progress and overall development.

The session commenced with an address by Dr. Jayavrinda Vrindavanam V, Professor & Chairperson, CSE (AI & ML), who welcomed the parents and emphasized the department's commitment to academic excellence and student success. This was followed by a presentation by Prof. Pradeep Kumar K, Assistant Professor, who highlighted the key achievements and milestones of the department. Mr. Vijay Kumar S, Director – Training & Corporate Relations, addressed the gathering and stressed the importance of attending CTS classes to enhance placement opportunities and career readiness. The meeting concluded with an interactive session where parents met their wards' class advisors and subject teachers to discuss individual performance. Parents also shared their valuable feedback, contributing to the continuous improvement of the department's academic environment.



“INNOVISION – Turning Vision into Innovation” Hackathon

The Department of CSE (AI & DS), School of Engineering, Dayananda Sagar University, successfully organized a hackathon titled “INNOVISION – Turning Vision into Innovation” on 5th March 2026 at Lecture Hall 1. The event aimed to promote creative thinking and innovative problem-solving among students by encouraging them to develop ideas addressing real-world challenges.

Students participated in teams and presented original concepts, which were evaluated based on innovation, impact, feasibility, and presentation. The hackathon featured a total prize pool of ₹6,000 and witnessed enthusiastic participation from students, making it a vibrant and engaging event.

The program was efficiently coordinated by Prof. Nadavadi Harshith Gowd and Prof. Pavani Vittapalli, along with student coordinator Rishitha Poornima S. The event concluded successfully with certificates awarded to all participants.

DAYANANDA SAGAR UNIVERSITY
SCHOOL OF ENGINEERING
Department of CSE(AI&DS)

INNOVISION

TURNING VISION INTO INNOVATION

AN EVENT FOR CREATIVE THINKING AND PROBLEM-SOLVING
GENERATING INNOVATIVE IDEAS ADDRESSING REAL-WORLD CHALLENGES

TOTAL PRIZE POOL
₹6,000

1ST PRIZE	₹3,000
2ND PRIZE	₹2,000
3RD PRIZE	₹1,000

JUDGING CRITERIA:

- IMPACT
- INNOVATION
- FEASIBILITY
- PRESENTATION

RULES:

- ONE IDEA PER TEAM
- NO PLAGIARISM
- JUDGES DECISION FINAL

SCAN TO REGISTER

📅 05/03/2026
📍 LECTURE HALL 1

TEACHER COORDINATORS
Prof. Nadavadi Harshith Gowd
Prof. Pavani Vittapalli

STUDENT COORDINATOR
Rishitha Poornima.S

TEAM SIZE: 3-5 MEMBERS
TIMINGS: 9:30 TO 3:30
TOPICS: ON SPOT & OWN IDEAS

CERTIFICATES & ATTENDANCE FOR ALL PARTICIPANTS

Tradition 3.0 – Reimagining Heritage Through Innovation

The Department of Computer Science and Technology, School of Engineering, Dayananda Sagar University, organized “Tradition 3.0 – Reimagining Heritage Through Innovation” on 5th March 2026.

The event served as a vibrant cultural and creative platform, bringing together students to celebrate traditional art, culture, and creativity while integrating innovative ideas. A variety of competitions were conducted, including Rangoli, Best Out of Waste, Texture Art, Cooking Without Fire, One-Minute Games, Short Film Showcase, Dance, Singing, and Mr. & Ms. CST.

These activities encouraged students to showcase their talents while promoting creativity, teamwork, sustainability awareness, and cultural appreciation.



Bengaluru, Karnataka, India 
Devarakaggalahalli, Kanakapura Main Rd, Harohalli, Bengaluru,
Karnataka 562112, India

Tradition 3.0 – Reimagining Heritage Through Innovation - A Few More Glimpses



Ramanavami Festival celebration at Department of Aerospace Engineering.

The Department of Aerospace Engineering at Dayananda Sagar University organized the auspicious Ramanavami Festival on 28th March 2026 with great enthusiasm and devotion. The celebration witnessed active participation from faculty members and students of the IV and VI semesters, reflecting a strong sense of cultural unity and tradition within the department.

The event was marked by traditional rituals, devotional activities, and a serene atmosphere that fostered spiritual reflection and togetherness among the participants. Such celebrations not only uphold the rich cultural heritage of our country but also strengthen interpersonal bonds and promote a holistic academic environment. The department takes pride in organizing events that balance technical excellence with cultural values, contributing to the overall development of students.



VLSI Design and Test Session

The Department of Electronics and Communication Engineering at Dayananda Sagar University organized an expert session on “VLSI Design and Test” on 27th February 2026 at the VLSI Lab, in association with IEEE Circuits and Systems Society and IEEE Council on Electronic Design Automation.

The session was delivered by Dr. Ravikumar CP, Chief Learning Officer at VinyanaTech, who provided valuable insights into the complete VLSI design flow, roles in the semiconductor industry, verification and validation concepts, and essential skills for aspiring engineers.

The event was convened by Dr. Arun Balodi, Professor and Chairman, Department of Electronics and Communication Engineering. The session offered practical exposure to real-world VLSI workflows and industry expectations, with interactive discussions and career guidance that were highly appreciated. This initiative reflects the department’s commitment to bridging academia and industry while preparing students for emerging opportunities in the semiconductor domain.



Department Of Electronics and Communication Engineering
Presents
**Expert Session On
VLSI DESIGN AND TEST**

- OVERVIEW OF VLSI DESIGN & TESTING ROLES.
- COMPLETE VLSI DESIGN FLOW UNDERSTANDING.
- CORE VERIFICATION & VALIDATION CONCEPTS.
- INDUSTRY SKILLS FOR VLSI CAREERS.

DR. RAVIKUMAR CP
CHIEF LEARNING OFFICER, VINYANATECH

CHIEF PATRONS
Dr. D. Hemachandra Sagar, Chancellor, DSU
Dr. D. Premchandra Sagar, Pro-Chancellor, DSU

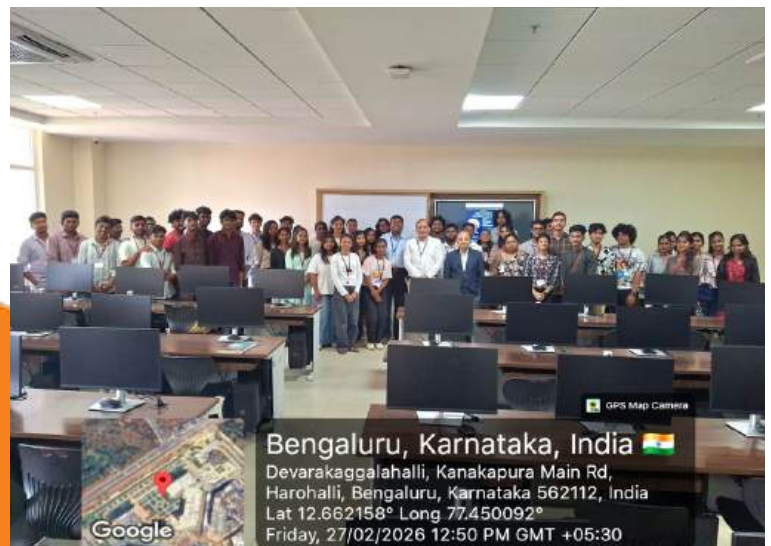
PATRONS
Dr. B. S. Satyanarayana, Vice-Chancellor, DSU
Prof. R. Janardhan, Pro-Vice Chancellor, DSU
Dr. Prakash S. Pro-Vice Chancellor, DSU
Dr. Udaya Kumar Reddy K. R., Dean-SOE, DSU
Dr. Puttannadappa C, Registrar, DSU

CONVENERS
Dr. Arun Balodi, Chairman-ECE, DSU
Faculty Advisor, CEDA

27th Feb, 2026
10:30 AM
VLSI LAB 308

Scan for registrations

dsuieeceda cedaxdsu



Sri Rama Navami Celebrations

The Department of ECE enthusiastically celebrated Sri Rama Navami with great devotion and cultural spirit. As part of the celebration, a beautifully decorated display board was arranged, showcasing an image of Lord Rama along with vibrant festive decorations and traditional elements.

Students actively participated in organizing and decorating the board, reflecting creativity, teamwork, and cultural awareness. The event created a spiritually uplifting atmosphere within the department and provided an opportunity for students to connect with Indian traditions and values.

Such activities play an important role in promoting cultural heritage, unity, and enthusiasm among students beyond academics.



Autodesk Fusion Insider Build Testing Design Competition

The Department of Mechanical Engineering, Dayananda Sagar University, organized the “Autodesk Fusion Insider Build Testing” Design Competition 2026 in association with Autodesk India from 28 to 31 March 2026 at the Bengaluru campus, under the guidance of convenor Dr. Saravanabavan D.

The event was coordinated by Dr. Shashidhar L C and Prof. Abhijith N, with expert support from the Autodesk team—Mr. Sujay, Mr. Vinayak, and Mr. Praise. Student coordinators Mr. Darshan, Mr. Akshay, and Mr. Dinesh ensured the smooth execution of the competition.

The program began with an expert briefing session on advanced tools in Autodesk Fusion 360, followed by a three-day design challenge focused on next-generation aerospace components. Participants developed and submitted their designs remotely using the software.

The competition promoted creativity, strengthened technical skills, and encouraged practical problem-solving. Top performers were felicitated, and all participants received certificates.

DAYANANDA SAGAR UNIVERSITY

SCHOOL OF ENGINEERING

AUTODESK

Department of Mechanical Engineering
Autodesk Design & Innovation Lab

“Autodesk Fusion Insider Build Testing” Design Competition 2026

Date:
28th March-31st March 2026

Timings:
10:00 AM to 4:30 PM

ABOUT THE EVENT

Dayananda Sagar University in association with Autodesk India presents the Autodesk Fusion Insider Build Testing Design Competition 2026, from 28-31 March 2026 at 002 Hall Campus, Bengaluru. The event begins with a briefing by Autodesk experts, followed by a 3-day design challenge where students will create innovative designs using Autodesk Fusion.

Theme: Next-Gen Aerospace Component Design & Innovation

Event Highlights:

- Competition is open to the first 60 registered participants only
- Briefing session by Autodesk experts - Lecture Hall-1 & Block School of Engineering
- 3-day design challenge using Autodesk Fusion - Students will work from their own locations
- Only Autodesk Fusion 360 software is permitted for the design submissions
- Top 3 designs will receive exciting prizes
- Certificates for all participants

A great opportunity to gain hands-on industry exposure, creativity, and real-world design experience.

Event Coordinators & Team

Convenor:
Dr. Saravanabavan D - Chairperson,
Department of Mechanical Engineering

Faculty Coordinator(s):
Dr. Shashidhar L C, Manager, Autodesk Lab
Prof. Abhijith N, Assistant Professor

Autodesk Team:
Mr. Sujay, Mr. Vinayak, Mr. Praise

Student Coordinator(s):
Mr. Darshan, Mr. Akshay, Mr. Dinesh

QR & Register!
Registration Link:
<https://forms.gle/rwv55rZeb08KA>

Location: Lecture Hall-1 Ground Floor, Followed by Design Lab, School of Engineering, Dayananda Sagar University, Devarakaggatahalli, Harohalli, Kanakapura Road, Bengaluru South Dt. - 562 112



Eco-Friendly Paper Bag Making and Community Distribution Initiative for Plastic Reduction Awareness

The Department of Artificial Intelligence and Robotics Engineering, School of Engineering, Dayananda Sagar University, organized an awareness program titled “Eco-Friendly Paper Bag Making and Community Distribution Initiative for Plastic Reduction Awareness” on 28th March 2026 at Room A341.

The program aimed to promote environmental sustainability by reducing plastic usage and encouraging eco-friendly alternatives. The session was delivered by Dr. Bharath Kumar S, Assistant Professor, who highlighted the impact of plastic pollution and conducted hands-on training in paper bag making. Students actively participated and distributed paper bags in the community to spread awareness.

The event was coordinated by Dr. Rupam Bhaduri, Dr. Gangadhar T G, Dr. Raguvaran S, Dr. Puneeth N, Prof. Lalit Ashutosh, Prof. Vikas Vishwakarma, and Prof. Bhavya L, under the chairmanship of Dr. Pramod Kumar Naik. Overall, the initiative was impactful in promoting sustainability, community engagement, and eco-friendly practices among students.



Dayananda Sagar University
School of Engineering

DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND ROBOTICS ENGINEERING

Eco-Friendly Paper Bag Making and Community Distribution Initiative for Plastic Reduction Awareness

Speaker:
Dr. Bharath Kumar S
 Assistant Professor
 Department of AI & Robotics
 Dayananda Sagar University

Faculty Coordinators	Chairperson	Dean
Dr. Rupam Bhaduri Dr. Gangadhar T G Dr. Raguvaran S Dr. Puneeth N Prof. Lalit Ashutosh Prof. Vikas Vishwakarma Prof. Bhavya L	Dr. Pramod Kumar Naik Chairperson, Dept. of Artificial Intelligence & Robotics Engineering	Dr. Udaya Kumar Reddy K. R Dean, SOE, DSU

Date- 28-03-2026
Time- 10 am onwards
Venue- A341

Parent-Teachers Meeting

The Parent-Teachers Meeting (PTM) was successfully conducted on 28th March 2026 at the School of Engineering, Dayananda Sagar University, from 10:30 AM to 12:30 PM. The meeting aimed to strengthen communication between parents and faculty and to discuss the academic progress, attendance, and overall development of students.

The session commenced with a brief welcome and address by Dean-SoE, Dr. Udaya Kumar Reddy, highlighting the importance of parental involvement in students' academic journey and orienting them on curriculum, extracurricular activities, sports facilities, and other internship and placement opportunities available on campus for students. The meeting was attended by first-year coordinators Dr. Sumathi and Dr. Seema Tharannum, along with the chairpersons of Mathematics, Physics, and Chemistry, as well as the faculty members handling the respective courses.



Industrial Visit to Nokia-Bangalore University Collaboration

The Department of Computer Science & Engineering, School of Engineering, Dayananda Sagar University, organized a one-day industrial visit to the Nokia campus on 24th March 2026 under the Nokia-Bangalore University Collaboration (NBUC) for 4th and 6th-semester CSE students.

The visit, accompanied by Dr. Sivananda Reddy, Dr. Chetan Sagarnal, and Prof. Shilpa Sudheendran, aimed to provide practical exposure to telecom technologies. Students learned about the evolution from 2G to 5G, gNB infrastructure, lab demonstrations, and the OSI model, helping them connect theory with real-world applications. The visit enhanced their understanding of modern communication systems and highlighted the importance of industry-academia collaboration.



Industrial Visit to M/s. Kamath Plastics Private Limited

The Department of Mechanical Engineering, School of Engineering, DSU, organized an industrial visit on 6 March 2026 to M/s. Kamath Plastics Private Limited, a well-established company specializing in injection molding and mold manufacturing.

The visit was led by Dr. Shashidhar L C and Mr. Abhishek M (PhD), Assistant Professor, Department of Mechanical Engineering, along with VI semester Mechanical Engineering students. It was thoughtfully planned to provide students with hands-on exposure to plastic production processes and to enhance their understanding of industry-relevant technologies.

During the visit, students gained valuable insights into real-world plastic molding operations and industrial workflows. The experience combined concept-based learning with practical industry applications, enabling participants to strengthen their technical skills, improve industry readiness, and foster collaborative learning.





Dr. Gayathri T
Assistant Professor
Department of Computer
Science and Engineering

Dr. Gayathri T, Assistant Professor, Department of CSE, published a research paper titled “Energy Efficient Federated Edge Reinforcement Optimization for Blockchain-IoT-Enabled Cyber-Physical Control of Renewable Microgrids” in the Q1 journal Sustainable Computing: Informatics and Systems on 26th February 2026.

The publication highlights advanced research in energy-efficient optimization, integrating blockchain, IoT, and cyber-physical systems for renewable microgrids.

The screenshot shows the ScienceDirect article page for the paper "Energy efficient federated edge reinforcement optimization for blockchain-IoT-enabled cyber-physical control of renewable microgrids". The page includes a navigation menu on the left with options like "Article preview", "Abstract", "Introduction", "Section snippets", and "References (41)". The main content area displays the journal title "Sustainable Computing: Informatics and Systems", the article title, authors (C. Mahiba, G. Shanmugarathinam, Anu Joseph, T. Gayathri, S. Provinth Raja, Vineetha B), and a "Highlights" section. The highlights section contains two bullet points: "Suggests a Federated Edge Reinforcement Optimization (FERO) model that combines DRL, federated learning, and blockchain for the management of cyber-physical grids." and "Increases the precision of fault detection to 98.8% and the time". On the right side, there are "Recommended articles" such as "Optimized rule-based energy management for AC/DC hybrid microgrids using price-...", "Assessing the energy transition pathways: Achieving net zero goals in Sierra Leone b...", and "Performance-oriented investment decision for small modular reactors with renewabl...".



Dr. Revathi V
Associate Professor
Department of Computer
Science and Engineering



Dr. Savitha Hiremath
Associate Professor
Department of Computer
Science and Engineering



Muthu Bala N
Assistant Professor
Department of Computer
Science and Engineering

Dr. Revathi V and Dr. Savitha Hiremath, Associate Professors, along with Prof. Muthubala N, Assistant Professor, Department of CSE, participated in and successfully completed a 6-day National Level Faculty Development Program (FDP) on “Generative & Agentic AI – Tools & Demo’s” from 16th to 21st February 2026.

The program was organized by the Department of CSE, Sardar Vallabhbhai National Institute of Technology (SVNIT), technically co-sponsored by IEEE – Gujarat Section, and partnered with Pantech Solutions (India) Pvt. Ltd.





Dr. Revathi V
Associate Professor
Department of Computer
Science and Engineering



Dr. Savitha Hiremath
Associate Professor
Department of Computer
Science and Engineering

Dr. Revathi V and Dr. Savitha Hiremath, Associate Professors, Department of CSE, attended the workshop on “AI Tools for Efficient and High-Quality Academic Research” held on 20–21 February 2026. The workshop was organized by the Center for Applied and Responsible AI (CARA) and the School of Computer Science and Engineering (SoCSE), RV University.





Bharath M B
Assistant Professor
Department of Computer
Science and Engineering

Prof. Bharath M B, Assistant Professor, Department of CSE, published an IEEE paper titled “Robust Federated Hybrid Deep Learning for Privacy-Preserving Cross-Site Scripting Detection with Adversarially Enriched Datasets” on 4th March 2026.

The paper was presented at the 2nd Asia Pacific Conference on Innovation in Technology (APCIT-2025), organized by Vidyavardhaka College of Engineering, Mysuru, India.

Robust Federated Hybrid Deep Learning for Privacy-Preserving Cross-Site Scripting Detection with Adversarially Enriched Datasets

Publisher: IEEE

Cite This



[Bharath M B](#); [Latha N R](#) All Authors



Abstract

Document Sections

I. Introduction

II. Related Work

III. Proposed Methodology

IV. Experimental Setup

V. Results and Discussion

Show Full Outline ▾

Authors

Figures

References

Keywords

Abstract:

Cross-site scripting (XSS) remains one of the most prevalent threats to web applications, exposing users to data theft, session hijacking, and service disruption. Conventional detection approaches, whether rule-based or centralized machine learning, often struggle with scalability, robustness, and privacy concerns. This paper presents a Robust Federated Hybrid Deep Learning Framework that enables collaborative XSS detection without exposing sensitive web traffic data. The proposed system combines federated learning with a hybrid deep neural architecture and integrates adversarially enriched datasets to improve resilience against evolving attack vectors. Privacy is preserved through local training and secure aggregation, ensuring that raw data never leaves institutional boundaries. Experiments on real-world XSS datasets demonstrate that the framework achieves superior detection accuracy and robustness compared to centralized and baseline FL models. Specifically, the proposed approach delivers up to 98.21% detection accuracy with significantly lower privacy leakage (11.3%) relative to centralized training. These findings confirm that the framework effectively balances detection performance, scalability, and privacy, making it suitable for deployment in modern web application security pipelines.

Published in: 2025 2nd Asia Pacific Conference on Innovation in Technology (APCIT)

Date of Conference: 19-20 September 2025

DOI: 10.1109/APCIT65661.2025.11411029

Date Added to IEEE Xplore: 04 March 2026

Publisher: IEEE

✓ **ISBN Information:**

Conference Location: MYSORE, India

SECTION I. Introduction



Dr. Vengatesan Krishnasamy
Professor
Department of Computer
Science and Engineering

Dr. Vengatesan Krishnasamy, Professor, Department of CSE served as the Resource Person for the One-Day Faculty Development Programme on “Empowering Academicians with Artificial Intelligence Tools and Applications”, organised by the Department of Commerce Shift I in collaboration with Pencil Bitz, conducted in online mode on 10 March 2026.



STELLA MARIS COLLEGE
 CHENNAI - 600 086



DEPARTMENT OF COMMERCE
 Organizes One Day FDP on

EMPOWERING ACADEMICIANS WITH ARTIFICIAL INTELLIGENCE TOOLS AND APPLICATIONS

Resource Person
Vengatesan Krishnasamy
 Professor
 Department of Computer Science and Engineering
 Dayananda Sagar University

Event Coordinator
Dr. Victoria Henry
 Assistant Professor & Head
 Department of Commerce

DATE: 10/03/2026

TIME: 06 PM to 08 PM

Online Mode

For more information
www.pencilbitz.com

PENCILBITZ COORDINATORS
 Ms. Revathi P - +91 79043 65197
 Ms. Reshma K - +91 73972 89488



STELLA MARIS COLLEGE
 (AUTONOMOUS)
 17, CATHEDRAL ROAD
 CHENNAI - 600 086.

Date: 10 March 2026

LETTER OF APPRECIATION

On behalf of the Department of Commerce – Shift I, Stella Maris College (Autonomous), Chennai, we take immense pleasure in extending our sincere gratitude and appreciation to Prof. Vengatesan Krishnasamy, Professor, Department of Computer Science and Engineering, Dayananda Sagar University, Bengaluru, for serving as the Resource Person for the One-Day Faculty Development Programme on “Empowering Academicians with Artificial Intelligence Tools and Applications”, organised by the Department of Commerce Shift I in collaboration with Pencil Bitz, conducted in online mode on 10 March 2026.

His insightful and engaging session provided academicians with valuable perspectives on the evolving role of Artificial Intelligence in teaching, research and academic productivity. The programme enabled participants to gain a clear understanding of emerging AI tools and their practical applications in contemporary academic environments.

The clarity of his explanations, the relevance of the tools demonstrated and the interactive nature of the session made the programme highly enriching and meaningful for the participants. His expertise helped faculty members explore innovative ways of integrating AI-driven technologies into teaching practices and academic work.

The session was greatly appreciated by the participants who found the programme informative, inspiring and academically empowering. His contribution has significantly strengthened the faculty's understanding of AI-enabled tools and their potential in enhancing teaching and research.

We deeply value the time, expertise and enthusiasm he shared with our academic community and look forward to future opportunities for collaboration.

Once again, we express our heartfelt appreciation for his valuable contribution and wish him continued success in his academic and professional journey.

Warm Regards,

Victoria H.

Dr. Victoria Henry
 Assistant Professor and Head
 Department of Commerce – Shift I
 Stella Maris College (Autonomous), Chennai
 Email: victoriahenry@stellamariscollege.edu.in



Dr. Natarajan Venkateswaran
Professor of Practice
Department of Computer
Science and Engineering

Dr. Natarajan Venkateswaran, Professor of Practice, Department of CSE, presented a paper titled “A Glass Box for the Clinic: A Transparent, Dual-LLM Framework for Explainable Medical Report Analysis” and received the Best Paper Award at the Fifth International Conference on Power, Control and Computing Technologies (ICPC2T-2026). The conference was held from 11–13 March 2026 and hosted by the Department of Electrical Engineering, National Institute of Technology Raipur.





Dr. J Sebastian Nixon
Professor
Department of Computer Science and Engineering

Dr. Nixon J S, Professor, Department of CSE published a paper titled “Privacy-Preserving Decentralized AI for Secure Data Sharing in 6G” at the Q3 Journal named Internet Technology Letters by Wiley publications during 25th February 2026.

The screenshot shows the Wiley article page for the paper "Privacy-Preserving Decentralized AI for Secure Data Sharing in 6G". The journal is "Internet Technology Letters", Volume 9, Issue 2, March/April 2026, e70234. The authors listed are Saravanan Subramani, J. Janet, J. Sebastian Nixon, L. Meenach, and Krishnaraj Natarajan. The article was first published on 25 February 2026. The DOI is https://doi.org/10.1002/itl2.70234. The abstract states: "Large-scale cross-domain data exchange via 6G networks is needed for intelligent applications. Centralized AI frameworks expose sensitive data, compromising privacy and security. This study proposes a privacy-preserving decentralized artificial intelligence (PPDAI) system for safe and verifiable data transmission using federated learning (FL) and blockchain-based access control (BAC). Avoiding data breaches and unwanted access, PPDAI saves raw data locally and delivers encrypted model updates via an immutable". The page also features a "Submit now" button for a special issue on the International Conference on Sustainable Computing and Communication Technologies (ICSCCT-2026) and navigation links for References, Related, and Information.



Dr. George Fernandez I
Associate Professor
Department of Computer
Science and Engineering

Dr. George Fernandez I, Associate Professor, Department of CSE, contributed as a Reviewer for the 2nd IEEE International Conference on Cognitive Computing in Engineering, Communications, Sciences and Biomedical Health Informatics (IC3ECSBHI-2026). The conference was held from 12–14 February 2026 at Gautam Buddha University, Greater Noida (U.P.), India.





Bharath B
Assistant Professor
Department of Computer
Science and Engineering

Prof. Bharath B, Assistant Professor, Department of CSE has presented a paper titled “An Enhanced Framework for Implementing Data Analytics and AI for Sustainable Business Growth: Pharmaceutical Supply Chain Case Validation” during the 2nd International Conference on Computing for Sustainability and Intelligent Future (COMPSIF 2026), organized by BMS Institute of Technology & Management, Yelahanka, Bengaluru - 560119, during 13, 14 March 2026.



ಬಿ.ಎಂ.ಎಸ್. ಇಂಟಿಗ್ರೇಟೆಡ್ ಟೆಕ್ನಾಲಜಿ ಮತ್ತು ಮ್ಯಾನೇಜ್‌ಮೆಂಟ್
BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT
(Autonomous Institution Under VTU)
Yelahanka, Bengaluru - 560119



IEEE
BANGALORE SECTION



Academic
Partner
MIET, Russia

Certificate of Presentation

This is to certify that

Bharath B, Dept. of CSE, Dayananda Sagar University

has presented a paper titled

An Enhanced Framework for Implementing Data Analytics and AI for Sustainable Business Growth : Pharmaceutical Supply Chain Case Validation

during the 2nd International Conference on Computing for Sustainability and Intelligent Future (COMPSIF 2026), organized by **BMS Institute of Technology & Management**, Yelahanka, Bengaluru - 560119, during 13,14 March 2026.

Dr. Anupama H S
Organizing Chair

Dr. Niranjnamurthy M
Organizing Chair

Dr. Shoba M
Technical Program Chair

Dr. Sanjay H A
General Chair



Dr. Sivananda Lahari Reddy
Associate Professor
Department of Computer
Science and Engineering

Dr. Sivananda Reddy, Associate Professor, Department of CSE has successfully completed the Agnirava AI Teacher Training Program, conducted by an IN-SPACE (ISRO) Registered Space Tutor, marking a significant step towards integrating advanced technologies into education during 7th January to 16th March 2026.





Dr. George Fernandez I
Associate Professor
Department of Computer
Science and Engineering

Dr George Fernandez I, Associate Professor, Department of CSE selected to lead editorial leadership of Mesopotamian Journal of Computer Science (MJCS), Dubai, UAE, during March 2026.



**Invitation to Join Mesopotamian Journal of Computer Science
(MJCS) Editorial Board**

Dear Prof. George Fernandez,

On behalf of the editorial leadership of Mesopotamian Journal of Computer Science (MJCS), we are pleased to invite you to join the journal's Editorial Board.

Mesopotamian Journal of Computer Science (MJCS) is currently advancing its editorial standards in line with COPE principles and international publishing best practices. We are forming a renewed Editorial Board of distinguished scholars whose expertise will support the journal's academic quality, peer-review process, and international visibility.

The journal is actively working toward indexing in major international databases, including Scopus, and your participation would significantly strengthen this effort.

Given your respected academic profile, we would be honored by your acceptance of this invitation.

We look forward to the possibility of working with you.

Warm regards,

Editorial Office
Mesopotamian Journal of Computer Science (MJCS)
Dubai, UAE
<https://mesopotamian.press/journals/index.php/cs/index>



Dr. George Fernandez I
Associate Professor
Department of CSE



Prof. Arpita Paria
Assistant Professor
Department of CSE



Prof. Viswas D B
Assistant Professor
Department of CSE



Prof. Aishwarya K
Associate Professor
Department of CSE



Prof. Bharath M B
Assistant Professor
Department of CSE



Prof. Mala B
Assistant Professor
Department of CSE

Dr. George Fernandez I, Associate Professor, along with Prof. Arpita Paria, Prof. Viswas D B, Prof. Aishwarya K, Prof. Bharath M B, and Prof. Mala B A, Assistant Professors, Department of CSE, published an Indian patent titled “Adaptive Distributed Structural Battery Architecture for Space-Optimized Electric Buses”.

(22) Date of filing of Application :07/03/2026

(43) Publication Date : 20/03/2026

(54) Title of the invention : Adaptive Distributed Structural Battery Architecture for Space-Optimized Electric Buses

(51) International classification	H01M 10/625, B60L 50/64, H01M 10/613, H01M 50/249, H01M 10/6556	(71)Name of Applicant : 1)Dayananda Sagar academy of technology and management Address of Applicant :Assistant Professor Department of computer science and Design, Dayananda Sagar academy of technology and management, Bengaluru, Karnataka mail id lavanya960@gmail.com Bengaluru Karnataka India 2)Dayananda Sagar University
(31) Priority Document No	:NA	(72)Name of Inventor : 1)Lavanya K 2)Dr. George Fernandez I 3)Prof. Arpita Paria 4)Dr. Om Prakash Keshri 5)Prof. Viswas D B 6)Aishwarya k 7)Prof. Bharath M B 8)Prof. Mala B A 9)Dr.Santosh Kumar J
(32) Priority Date	:NA	
(33) Name of priority country	:NA	
(86) International Application No	:	
Filing Date	:01/01/1900	
(87) International Publication No	: NA	
(61) Patent of Addition to Application Number	:NA	
Filing Date	:NA	
(62) Divisional to Application Number	:NA	
Filing Date	:NA	

(57) Abstract :

Current high capacity and structural efficiency electric bus models use relatively large, monolithic battery packs located within the structure, taking up a large portion of its interior space (and therefore compromising seating density and thermal management). This invention presents a distributed structural battery design, which places modular battery modules into the chassis members, floor sandwich panels and side structures of the vehicle. This makes each load-carrying structural member a combination load bearing member and battery container. Zoned battery management systems are used to adjust the power flow between individual zones and turn specific zones on and off depending on load (e.g. Passengers, incline, vehicle speed), etc. The structural members are also hollowed out with integrated thermal channels for dissipating battery heat without large, auxiliary cooling components. The modular batteries are arranged such that their components can be exchanged quickly as a unit, thereby increasing serviceability and isolating thermal and electrical faults between zones. By distributed the battery capacity across a multitude of structural members, the energy density of the vehicle is maintained, but much greater interior room becomes available for passengers, which offers increased seating capacity. This further allows for optimal weight distribution throughout the vehicle and improved operational efficiencies.

No. of Pages : 16 No. of Claims : 6



Mala B A
Assistant Professor
Department of Computer
Science and Engineering



Prof. Bharath M B
Assistant Professor
Department of CSE

Prof. Mala B A, Prof. Bharath M B, Assistant Professors, Department of CSE published an Indian patent with the titled “Real-Time Metabolic Drift Detection System Using Intelligent Microfluidic IoT Patch Sensors” under the applicant name DSU with the application number 202641026797 during 20th March 2026.

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202641026797 A

(19) INDIA

(22) Date of filing of Application :07/03/2026

(43) Publication Date : 20/03/2026

(54) Title of the invention : Real-Time Metabolic Drift Detection System Using Intelligent Microfluidic IoT Patch Sensors|

(51) International classification	:A61B 5/145, A61B 5/00, A61B 5/1486, A61B 5/1459, A61B 5/1473	(71)Name of Applicant : 1)Vemana Institute of Technology Address of Applicant :Associate Professor, Department of Artificial Intelligence and Machine Learning, #1 Mahayogi Vemana Road, 3rd Block, Kormangala, Vemana Institute of Technology, Bengaluru, Karnataka-560 034 e-mail address: kantharajuhc@gmail.com Phone no:9449129640 Bengaluru Karnataka India 2)Dayananda Sagar University
(31) Priority Document No	:NA	(72)Name of Inventor : 1)Dr.Kantharaju H.C 2)Prof. Sowjanya S 3)Prof. Madhu Rekha M 4)Prof. Ashvini V 5)Prof. Latha Yadav T R 6)Prof. Mala B A 7)Prof. Bharath M B 8)Dr.Santosh Kumar J
(32) Priority Date	:NA	
(33) Name of priority country	:NA	
(86) International Application No	:	
Filing Date	:01/01/1900	
(87) International Publication No	:NA	
(61) Patent of Addition to Application Number	:NA	
Filing Date	:NA	
(62) Divisional to Application Number	:NA	
Filing Date	:NA	

(57) Abstract :

The current invention is associated with a real-time metabolic drift detection system that is wearable, with smart microfluidic IoT patch sensors to perform continuous multi-analyte physiological surveillance. The system consists of an elastic biocompatible substrate embedded in capillary-based microfluidic micro channels, as well as a diversity of electrochemical biosensors that have been programmed to identify metabolic biomarkers such as glucose, lactate, electrolytes, pH, and stress biosensors. Amplified and conditioned biosensor signals are analog front-ended with an analog-to-digital converter and conditioned with an analog front-end circuit and a digitizer, and processed by a microcontroller based edge processing unit. The edge processing unit derives a personal metabolic baseline and compares a drift score based on deviation and rate-of-change measures to a metabolic drift score. An adjustable threshold module is a dynamical module which modulates alert levels depending on the past physiological behaviour. The system also incorporates a dynamic energy management unit that is set to adjust the sensing frequency and allow event-based encrypted wireless transfer of summarized metabolic data, hence minimizing power consumption and communication delay. The invention will allow to early identify metabolic imbalance and provide better energy efficiency, as well as the privacy of the data and predictive health monitoring in a small wearable form that can be used in a real-time environment.

No. of Pages : 19 No. of Claims : 9



Dr. N. Bharathiraja
Associate Professor
Department of Computer
Science and Engineering

Dr. N. Bharathiraja, Associate Professor, Department of CSE, published a research paper titled “Self-Evolving Energy Harvesting Framework for IoT Sensor Nodes Using Bio-Inspired Scheduling Algorithms” in the SCIE-indexed, Q2 journal International Journal of Communication Systems (Wiley), with an Impact Factor of 1.8. The paper was published on 20th March 2026 (Vol. 39, Issue 7, Page: e70469).

International Journal of Communication Systems

WILEY

RESEARCH ARTICLE

Self-Evolving Energy Harvesting Framework for IoT Sensor Nodes Using Bio-Inspired Scheduling Algorithms

Somasundaram Kasiviswanathan¹ | Sellakumar S² | Bharathiraja N³ | Richa Vijay⁴

¹Department of Computer Science and Engineering, Chennai Institute of Technology, Chennai, Tamil Nadu, India | ²Department of Mechanical Engineering, Savitri Engineering College, Chennai, Tamil Nadu, India | ³Department of Computer Science and Engineering, School of Engineering, Dr. Jayaraj Sagar University, Bangalore, Karnataka, India | ⁴School of Computer Science and Engineering, IILM University, Greater Noida, Uttar Pradesh, India

Correspondence: Somasundaram Kasiviswanathan (somasundaramk@cit Chennai.net)

Received: 29 July 2025 | Revised: 30 January 2026 | Accepted: 19 February 2026

Keywords: adaptive scheduling | bio-inspired algorithms | energy harvesting | IoT | sensor nodes | sustainability

ABSTRACT

The Internet of Things (IoT) market experiences rapid growth, which creates a requirement for energy management systems that can independently operate in a sustainable manner. Traditional energy harvesting (EH) techniques depend on either static methods or computation-intensive processes, which limit their ability to function in changing environmental conditions. This paper presents a self-evolving energy harvesting system that uses hybrid bio-inspired scheduling algorithms to control energy harvesting and consumption throughout real-time operations. ACO creates energy source priority lists based on past harvesting performance because PSO enables operators to shift their scheduling plans between different modes without incurring heavy computational requirements. The framework uses mathematical modeling to express its energy behavior and system flexibility and environmental sustainability performance. Simulation tests conducted in a diverse smart-farm IoT environment show that our system achieves 35% better energy efficiency and 42% longer network operation time when compared to traditional static systems and learning-based methods. The current research makes an important scientific contribution by developing an energy management system that operates with minimal resource demands and can adjust to various situations, which connects bio-inspired research with actual resource-limited IoT applications.

1 | Introduction

The widespread application of Internet of Things (IoT) sensor nodes to smart agriculture, environmental monitoring applications, and smart cities is fundamentally limited by the availability of energy. The majority of IoT use finite capacity batteries, and this makes them expensive to maintain; their lifespan in operation is relatively short, and they pose a waste to the environment. Ambient energy harvesting (EH) is a potentially promising solution to the issue, though the stochasticity and variability of environmental energy remain a thorn in the side of effectively managing energy.

Though studies examining EH technologies and adaptive energy management have been found to be significant, the majority of current solutions are based on either fixed scheduling or learning-based. This is because the methods that are static do not respond to environmental changes, whereas the reinforcement and the deep learning-based schedulers are computationally expensive, slow to converge, and they need

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<https://doi.org/10.1002/ics.70469>

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Bharath B
Assistant Professor
Department of Computer
Science and Engineering



Prof. Kavyashree Pattan
Assistant Professor
Department of Computer
Science and Engineering

Prof. Bharath B and Prof. Kavyashree Pattan, Assistant Professors, Department of CSE, completed a Faculty Development Program on Data Science (ML & AI) from 23-02-2026 to 08-03-2026. The program was organized by the EICTA Consortium (a joint initiative of MeitY and IITs, NITs, and IIITs).





Sindhu A
Assistant Professor
Department of Data Science

1) Sindhu A has successfully published a patent titled “IoT-Based Smart Irrigation Optimization System for Efficient Water and Power Utilization” (Application No. 202641025673 A), published on 13/03/2026.

2) Sindhu A participated in a 6 Days National Level Faculty Development Program (FDP) on “Generative & Agentic AI – Tools & Demo’s” organized by the Department of Computer Science and Engineering from 16th to 21st February 2026 at Sardar Vallabhbhai National Institute of Technology (SVNIT), Surat, technically co-sponsored by IEEE Gujarat Section.

(12) PATENT APPLICATION PUBLICATION	(21) Application No.202641025673 A																																																
(19) INDIA																																																	
(22) Date of filing of Application :04/03/2026	(43) Publication Date : 13/03/2026																																																
(54) Title of the invention : IOT-BASED SMART IRRIGATION OPTIMIZATION SYSTEM FOR EFFICIENT WATER AND POWER UTILIZATION																																																	
(51) International classification	<table border="0"> <tr> <td>-A01G</td> <td>(71)Name of Applicant :</td> </tr> <tr> <td>25/16,</td> <td>1)Dayananda Sagar University Bangalore</td> </tr> <tr> <td>G06Q</td> <td>Address of Applicant :Devarakaggalhalli, Hirehalli,</td> </tr> <tr> <td>50/02,</td> <td>Kanakapura Road, Bengaluru South Dt, Bengaluru-562112,</td> </tr> <tr> <td>G06N</td> <td>Karnataka, India Karnataka India</td> </tr> <tr> <td>20/00,</td> <td>(72)Name of Inventor :</td> </tr> <tr> <td>G06Q</td> <td>1)Dr. Shreekant Salotagi</td> </tr> <tr> <td>50/06,</td> <td>2)Vishpal Gupta</td> </tr> <tr> <td>G05B</td> <td>3)Santhosh M</td> </tr> <tr> <td>13/02</td> <td>4)Sindhu A</td> </tr> <tr> <td>(31) Priority Document No</td> <td>5)Dr. Naitik S. T.</td> </tr> <tr> <td>-NA</td> <td>6)Dr. Prashant Basavaraj Bhagawati</td> </tr> <tr> <td>(32) Priority Date</td> <td>7)Dr. B. R. Manjunatha</td> </tr> <tr> <td>-NA</td> <td></td> </tr> <tr> <td>(33) Name of priority country</td> <td></td> </tr> <tr> <td>-NA</td> <td></td> </tr> <tr> <td>(86) International Application No</td> <td></td> </tr> <tr> <td>-</td> <td></td> </tr> <tr> <td>Filing Date</td> <td>01/01/1900</td> </tr> <tr> <td>(87) International Publication No</td> <td>-NA</td> </tr> <tr> <td>(61) Patent of Addition to Application Number</td> <td>-NA</td> </tr> <tr> <td>Filing Date</td> <td>-NA</td> </tr> <tr> <td>(62) Divisional to Application Number</td> <td>-NA</td> </tr> <tr> <td>Filing Date</td> <td>-NA</td> </tr> </table>	-A01G	(71)Name of Applicant :	25/16,	1)Dayananda Sagar University Bangalore	G06Q	Address of Applicant :Devarakaggalhalli, Hirehalli,	50/02,	Kanakapura Road, Bengaluru South Dt, Bengaluru-562112,	G06N	Karnataka, India Karnataka India	20/00,	(72)Name of Inventor :	G06Q	1)Dr. Shreekant Salotagi	50/06,	2)Vishpal Gupta	G05B	3)Santhosh M	13/02	4)Sindhu A	(31) Priority Document No	5)Dr. Naitik S. T.	-NA	6)Dr. Prashant Basavaraj Bhagawati	(32) Priority Date	7)Dr. B. R. Manjunatha	-NA		(33) Name of priority country		-NA		(86) International Application No		-		Filing Date	01/01/1900	(87) International Publication No	-NA	(61) Patent of Addition to Application Number	-NA	Filing Date	-NA	(62) Divisional to Application Number	-NA	Filing Date	-NA
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(62) Divisional to Application Number	-NA																																																
Filing Date	-NA																																																





Sindhu A
Assistant Professor
Department of Data Science

1) Sindhu A has successfully presented the research paper titled: “Efficient Secure Aggregation in Federated Learning for Edge Computing” at the 6th International Conference on Image Processing and Capsule Networks (ICIPCN 2026), organized by Kathmandu University, Dhulikhel, Nepal, held during 27–29 January 2026.

2) Sindhu A has published a research paper titled “Exploratory Analysis and Temporal Dynamics of Air Pollution in Bengaluru” in the proceedings of the 6th International Conference on Communication, Computing & Industry 6.0. The paper was published on IEEE Xplore on 03 February 2026.



Exploratory Analysis and Temporal Dynamics of Air pollution in Bengaluru

Publisher: IEEE [Cite This](#) [PDF](#)

[A Suresh](#) ; [M.N Saroja](#) ; [S Kannan](#) ; [A Sindhu](#) ; [A Esakkiammal](#) All Authors



Abstract	Abstract: The Indian cities have established air pollution as a critical environmental and health concern which affects the entire nation. The study evaluates Bengaluru's Air Quality Index (AQI) data from 2017 to 2024 through detailed timebased and statistical methods. The research demonstrates that air pollution levels reach their peak during winter months from December to February but decrease substantially during the monsoon period from June to August. The 2020 COVID-19 lockdown resulted in substantial reductions of AQI values because of reduced human activity. The highest pollution levels occurred in 2019, but the AQI readings stayed mostly between 75 and 135 which falls under the 'Moderate' category. The pollution levels show a pattern of higher readings on weekdays because of vehicle and industrial emissions. The research demonstrates how urban growth interacts with weather conditions and human-made pollution sources to produce air quality changes. The research findings establish a data-based framework which enables urban planners to create effective sustainable air-quality management strategies for Bengaluru
Document Sections	
I. Introduction (Heading 1)	
II. Literature Review	
III. Methodology	
IV. Usiexploratory Analysis	
V. Results and Discussion	
Show Full Outline ▾	
Authors	Published in: 2025 6th International Conference on Communication, Computing & Industry 6.0 (C216)
Figures	Date of Conference: 05-06 December 2025 DOI: 10.1109/C21666499.2025.11366987
References	Date Added to IEEE Xplore: 03 February 2026 Publisher: IEEE
Keywords	Conference Location: Bengaluru, India
	ISBN Information: Electronic ISBN: 979-8-3315-0240-9 Print on Demand (PoD) ISBN: 979-8-3315-0241-6



Dr. Suresh Arumugam
Associate Professor
Department of Data Science

- 1) Dr. Suresh Arumugam has successfully presented the research paper titled “Smart Energy Optimization System Using AI Agents to Monitor, Analyze and Optimize Energy Utilization” at the 3rd International Conference on Machine Learning and Autonomous Systems (ICMLAS 2026) held from 11–13 March 2026 at Stamford International University, Bangkok, Thailand.
- 2) Dr. Suresh Arumugam has successfully presented the research paper titled “Tasmanian Devil Integrated Greylag Goose Optimization for Secure and Energy Efficient Clustering and Routing in Wireless Sensor Network” at the 3rd International Conference on Integrated Intelligence and Communication Systems (ICIICS-2026) organized by Sharnbasva University, Kalaburagi, held from 20–21 February 2026.





Dr. Suresh Arumugam
Associate Professor
Department of Data Science

- 1) Dr. Suresh Arumugam has successfully presented the research paper titled “AMF-IoT-Health: An Adaptive Multi-Modal Fusion Framework for Real-Time Smart Health Monitoring Using IoT Sensors” at the 3rd International Conference on Integrated Intelligence and Communication Systems (ICIICS-2026) organized by Sharnbasva University, Kalaburagi, held from 20–21 February 2026.
- 2) Dr. Suresh Arumugam has successfully presented the research paper titled “Smart City Traffic Optimization Using Adaptive Spatio-Temporal Graph Attention with Predictive Consistency Learning” at the 3rd International Conference on Integrated Intelligence and Communication Systems (ICIICS-2026) organized by Sharnbasva University, Kalaburagi, held in February 2026.





Dr. Suresh Arumugam
Associate Professor
Department of Data Science

Dr. Suresh Arumugam has successfully participated in a 6-day National Level Faculty Development Programme (FDP) on “Generative & Agentic AI – Tools & Demos”, organized by the Department of Computer Science and Engineering, Sardar Vallabhbhai National Institute of Technology (SVNIT), Surat, from 16th to 21st February 2026, technically co-sponsored by the IEEE Gujarat Section.





Dr. U. Pavan Kumar
Assistant Professor
Department of Data Science

- 1) Dr. U. Pavan Kumar has successfully presented a research paper titled “Hybrid Orientation Token and Lightweight Transformer Architecture for Robust Fingerprint Pattern Classification” at the 2nd International Conference on Computing for Sustainability and Intelligent Future (COMPSIF 2026) organized by BMS Institute of Technology & Management, Bengaluru, held during 13–14 March 2026.
- 2) Dr. U. Pavan Kumar has successfully completed an online Faculty Development Program (FDP) on “Deep Learning” organized by SkillDzire in collaboration with AICTE during the period 09 March 2026 to 21 March 2026. The programme enhanced knowledge and practical understanding of deep learning concepts and applications.





Dr. Jobin Thomas
Assistant Professor
Department of Data Science


Dr. Jobin Thomas has successfully completed a Six-Day Online Faculty Development Programme on “Research Methodology and Pedagogy for Academic Excellence” conducted by Sir M. Visvesvaraya Institute of Technology (Sir MVIT), Bengaluru in March 2026.


SRI KRISHNADEVARAYA EDUCATIONAL TRUST
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Krishnadevaraya Nagar, Hunasamaranahalli, Off Kempegowda International Airport Road, Bengaluru - 562157

DEPARTMENT OF MATHEMATICS
Six Days – Online Faculty Development Program on
“RESEARCH METHODOLOGY AND PEDAGOGY FOR ACADEMIC EXCELLENCE”

CERTIFICATE OF PARTICIPATION
This is to certify that

Dr. Jobin Thomas, Assistant Professor, Department of CSE(DATA SCIENCE), Dayananda Sagar University, Bangalore has participated in 6 – days Online Faculty Development Program on “Research Methodology and Pedagogy for Academic Excellence” from 9th to 14th March, 2026.


Organizing Chair
Dr. M. N. Thippeswamy
Principal
Sir MVIT, Bengaluru – 562 157


Convenor
Dr. S. Sreelakshmi
Professor & Head
Dept. of Mathematics



Godhandaraman T
Assistant Professor
Department of Data Science

1) Godhandaraman T has successfully presented the research paper titled “Nanosatellite and IoT-Enabled Climate–NDVI Data Fusion for Accurate Wheat Yield Prediction” at the 10th International Conference on Communication and Electronics Systems (ICCES-2025).

2) Godhandaraman T has successfully presented the research paper titled “Federated Digital Twin and Blockchain Framework for Lunar/Deep-Space Waste-to-Resource Circularity” at the 2025 International Conference on NexGen Networks and Cybernetics (IC2NC).





Godhandaraman T
Assistant Professor
Department of Data Science

- 1) Godhandaraman T has successfully presented the research paper titled “Federated Learning in Agriculture: Current Advances, Open Challenges, and Future Horizons” at the 2025 International Conference on NexGen Networks and Cybernetics (IC2NC).
- 2) Godhandaraman T has successfully presented the research paper titled “Hybrid 3D Dual-Path Transformer and Residual Attention U-Net for Efficient Brain Tumor Segmentation from MRI Scans” at the 2025 Modern Electronics Devices and Intelligent Communication Systems (MEDCOM).





Godhandaraman T
Assistant Professor
Department of Data Science

1) Godhandaraman T has contributed as a co-inventor to eleven patents published on 20 March 2026, showcasing expertise in agriculture, transportation safety, healthcare, and intelligent monitoring systems.

The patents include “Autonomous Multimodal Intelligence System with Cross-Modal Attention and Bio-Physiological Root-Zone Digital Twin for Real-Time Rice Yield and Grain Quality Optimization” and “A Pattern-Driven Deep Learning Time-Optimized Crop Yield Prediction System,” both of which focus on improving crop productivity and agricultural decision-making through artificial intelligence and digital twin technologies.

2) His other patented works are “Method and System for Autonomous Multi-Modal Distress Detection and Secure Forensic Evidence Generation,” “Advanced Rail–Road Collision Prevention and Disaster-Aware Transport Safety Network,” and “Hybrid Edge-Integrated Digital Twin–Based Multimodal Physiological Health Monitoring and Predictive Risk Assessment System and Method thereof.” These inventions emphasize public safety, reducing transport risk, secure forensic systems, and predictive healthcare monitoring using advanced AI-driven solutions.

3) The other patents include “Adaptive Soft-Robotic ExoSleeve with Multimodal Biofeedback, Neuro-Muscular Digital Twin, and Learning-Based Personalized Rehabilitation Control,” “System and Method for Predicting and Preventing Hospital-Acquired Infections using Digital Twin,” and “System and Method for Adaptive Healthcare Robotics Using Reinforcement Learning, Multimodal Physiological Sensing, and Digital Twin-Validated Intervention.”

These inventions focus on advanced rehabilitation systems, predictive healthcare, infection prevention, and AI-driven medical robotics.

4) Godhandaraman T has also co-invented “Autonomous Multi-Terrain Interplanetary Explorer with Reconfigurable Wheel–Leg Mobility,” “A Swarm-Intelligence-Based Autonomous Robotic Ecosystem for Predictive Maintenance and Adaptive Self-Repair of Space Infrastructure,” and “A Self-Optimizing Mechatronic Actuation and Control System with Multi-Sensor Fusion and Self-Healing Mechanisms.” These patents highlight innovations in space exploration, intelligent robotic maintenance, and advanced self-healing mechatronic systems.



Dr. Joshua Arockia Dhanraj
Professor
Department of AI&ML

1) Dr. Joshua Arockia Dhanraj, Professor, CSE (AI & ML), has been recognized as a Reviewer at the 2nd IEEE International Conference on Cognitive Computing in Engineering, Communications, Sciences and Biomedical Health Informatics (IC3ECSBHI-2026) held during February 12–14, 2026, at Gautam Buddha University, Greater Noida, India.

2) Dr. Joshua Arockia Dhanraj, Professor, CSE (AI & ML), has presented a research paper titled “A Hybrid Quantum–Classical Federated Learning Integrated Framework for Diagnosing Robot Execution Failure under IID & Non-IID Condition” at the International Conference on Next-Gen Quantum and Advanced Computing: Algorithms, Security, and Beyond (NQComp-2026) held on March 5–6, 2026 at Manipal Institute of Technology, Bengaluru.





Dr. Joshuva Arockia Dhanraj
Professor
Department of AI&ML

- 1) Dr. Joshuva Arockia Dhanraj, Professor, CSE (AI & ML), has served as a Session Chair at the International Conference on “Developments in Sustainable & Innovative Design for Manufacturing, Mobility & Energy Systems 2026” (DSI-DMMES-2K26) held on February 27–28, 2026, at Dayananda Sagar College of Engineering, Bengaluru.
- 2) r. Joshuva Arockia Dhanraj, Professor in CSE (AI&ML) has completed a Faculty Development Programme titled “Developing Teaching Professionals for Institutional Development”, conducted by the National Institute of Technical Teachers Training and Research (NITTTR), Chennai, from March 9 to March 13, 2026, through online mode.





Dr. Joshua Arockia Dhanraj
Professor
Department of AI&ML

Dr. Joshua Arockia Dhanraj, Professor, CSE (AI & ML), has actively contributed to the global research community through an extensive peer-review record between March 1, 2026 and March 23, 2026, completing a total of 35 high-quality reviews across 15 reputed international journals. His review contributions span leading journals including Applied Energy, Digital Signal Processing, Energy Reports, Information Sciences, and Knowledge-Based Systems, among others. His expertise in AI, signal processing, and intelligent systems has supported rigorous manuscript evaluation, ensuring scientific quality, novelty, and methodological soundness across multidisciplinary research domains.



Review History Report

Joshuva Arockia Dhanraj



From: 1 March 2026 To: 23 March 2026
All dates in GMT

Total journals reviewed for: 15
Total reviews completed: 35

	Applied Energy	1
	CIRP Journal of Manufacturing Science and Technology	1
	Computers & Electrical Engineering	3
	Computers & Industrial Engineering	1
	Digital Signal Processing	10
	Energy	1
	Energy Reports	6



Review History Report

Joshuva Arockia Dhanraj



From: 1 March 2026 To: 23 March 2026
All dates in GMT

	Engineering Applications of Artificial Intelligence	1
	Environmental and Sustainability Indicators	1
	Franklin Open	1
	Information Sciences	4
	International Journal of Hydrogen Energy	1
	Knowledge-Based Systems	2
	Polyhedron	1



Dr. Joshuva Arockia Dhanraj
Professor
Department of AI&ML

Dr. Joshuva Arockia Dhanraj, along with a collaborative research team from the AI & Robotics Department and CSE (Data Science) Department, has successfully published a patent titled “Hybrid Edge-Integrated Digital Twin–Based Multimodal Physiological Health Monitoring and Predictive Risk Assessment System and Method thereof” under Application No. 202641015887 A. The Inventors include: Joshuva Arockia Dhanraj, Bhavya Lingampalli, M Lakshmanan, Sriramkumar R, Jayavrinda V Vadakkeparambil, Godhandaraman T, Sugandha Saxena, Mude Nagarjuna Naik. This invention presents a wearable, edge-integrated healthcare system combining multimodal biosensing (ECG, PPG, thermal, inertial) with embedded intelligence for real-time physiological monitoring. It employs a digital twin model to simulate patient-specific physiological behavior and detect deviations indicative of early-stage diseases. The system ensures privacy by transmitting encrypted feature-level data rather than raw signals. Adaptive sensing strategies reduce energy consumption while maintaining diagnostic accuracy. The architecture supports continuous, low-latency monitoring suitable for long-term preventive healthcare applications.

(1.2) PATENT APPLICATION PUBLICATION	(21) Application No. 202641015887 A
(1.9) INDKA	(22) Publication Date : 20/03/2026
(2.7) Date of filing of Application : 12/03/2026	(43) Publication Date : 20/03/2026
(54) Title of the invention: Hybrid Edge-Integrated Digital Twin–Based Multimodal Physiological Health Monitoring and Predictive Risk Assessment System and Method thereof	
(51) International Classification	A61B 5/00, G16H 50/30, A61B 5/0205, A61B 5/01, A61B 46/18, G16H 50/433
(71) Name of Applicant :	1)Rajawada Sagar University Address of Applicant: Dewankogal-Jalle, Harshali, Kavalapara Road, Bengaluru, South District-562 112,Karnataka India, Karnataka India
(72) Name of Inventor :	1)Joshuva Arockia Dhanraj 2)Bhavya Lingampalli 3)M Lakshmanan 4)Sriramkumar R 5)Jayavrinda V Vadakkeparambil 6)Godhandaraman T 7)Sugandha Saxena 8)Mude Nagarjuna Naik
(31) Priority Document No	NA
(32) Priority Date	NA
(33) Name of priority country	NA
(36) International Application No	NA
Filing Date	01/01/2026
(37) International Publication No	NA
(61) Patent of Addition to Application Number	NA
Filing Date	NA
(62) Divisional to Application Number	NA
Filing Date	NA
(57) Abstract The Hybrid Edge-Integrated Digital Twin–Based Multimodal Physiological Health Monitoring and Predictive Risk Assessment System and Method thereof of the present technology discloses a hybrid edge-integrated, privacy-preserving wearable health monitoring system for continuous, non-invasive physiological surveillance and early illness prediction. A skin-adhered patch integrates multimodal sensors including electrocardiographic, photoplethysmographic, electrodermal, thermal, and inertial sensing, together with an analog front-end and an embedded controller for local feature extraction. Instead of transmitting raw signals, the patch generates encrypted, feature-level embeddings that are securely communicated to a local edge device. The edge device executes a personalized pre-trained digital twin and a multimodal fusion module to model expected physiological behaviors, compare predicted and observed states, and compute deviation-based risk scores. Based on risk level, the system adaptively controls sensing and processing and triggers trend alerts. The architecture enables early pre-symptomatic detection, reduced false alarms, low-latency operation, improved energy efficiency, and strong privacy protection for long-term health monitoring. No. of Pages : 24 No. of Claims : 9	



Dr. Joshua Arockia Dhanraj
Professor
Department of AI&ML

Dr. Joshua Arockia Dhanraj, in collaborative work with the AI & Robotics Department and CSE (Data Science) Department, has published the patent “Adaptive Soft-Robotic ExoSleeve with Multimodal Biofeedback, Neuro-Muscular Digital Twin, and Learning-Based Personalized Rehabilitation Control” under Application No. 202641012362 A. The Inventors are: Joshua Arockia Dhanraj, Bhavya Lingampalli, M Lakshmanan, Sriramkumar R, Godhandaraman T, Sugandha Saxena, Jayavrinda V Vadakkeparambil, Pradeep Kumar K. The highlights of this patent are that this system introduces a soft robotic exosleeve capable of delivering personalized rehabilitation through real-time biofeedback and adaptive control. It integrates multimodal sensing to capture muscle activity, joint motion, and fatigue states. A reinforcement learning-based controller dynamically adjusts actuation parameters such as torque and stiffness. The embedded neuromuscular digital twin predicts patient-specific responses and optimizes therapy progression. The system ensures safe, closed-loop operation suitable for both clinical and home-based rehabilitation.

(12) PATENT APPLICATION PUBLICATION	(21) Application No. 202641012362 A
(16) INDIAN	(43) Publication Date : 20/03/2026
(72) Date of filing of Application : 05/03/2026	
(54) Title of the invention : Adaptive Soft-Robotic ExoSleeve with Multimodal Biofeedback, Neuro-Muscular Digital Twin, and Learning-Based Personalized Rehabilitation Control	
(51) International Classification	A61B 1/02, A61B 2/00, A61B 7/11, A61B 3/00, B23J 9/16
(31) Priority Document No	(71) Name of Applicant :
(32) Priority Date	1)Dhyananda Sagar University
(33) Name of priority country	Address of Applicant : Devarajalingudhali, Harshali, Kavalpura
(36) International Application No	Road Bangalore, South District-562 112,Karnataka India, Karnataka India
Filing Date	(72) Name of Inventor :
(37) International Publication No	1)Joshua Arockia Dhanraj
(38) Power of Addition to Application Number	2)Bhavya Lingampalli
Filing Date	3)M Lakshmanan
(39) International to Application Number	4)Sriramkumar R
Filing Date	5)Godhandaraman T
(40) International to Application Number	6)Sugandha Saxena
Filing Date	7)Jayavrinda V Vadakkeparambil
	8)Pradeep Kumar K
(41) Abstract	
Title: Adaptive Soft-Robotic ExoSleeve with Multimodal Biofeedback, Neuro-Muscular Digital Twin, and Learning-Based Personalized Rehabilitation Control. An adaptive robotic exoSleeve for neuromuscular rehabilitation is disclosed. The system comprises a wearable soft-robotic sleeve integrated with multimodal biosensors configured to acquire real-time physiological and biomechanical signals indicative of muscle activity, joint kinematics, force generation, and fatigue state. An edge-based adaptive control module executes a reinforcement-learning policy in cooperation with a personalized neuromuscular digital twin that predicts expected muscle activation, joint dynamics, and fatigue progression for prescribed rehabilitation tasks. Amplitude, torque, stiffness, damping, and motion trajectory are dynamically modulated based on fused biofeedback and predictive outputs to provide patient-specific, fatigue-aware assistance or resistance. The system operates in a closed-loop, low-latency manner with integrated safety supervision and autonomously transitions between assistive, adaptive, and resistive rehabilitation phases. The invention enables personalized, safe, and scalable neuromuscular rehabilitation, suitable for clinical and home-based use.	
No. of Pages : 25 No. of Claims : 9	



Dr. Joshuva Arockia Dhanraj
Professor
Department of AI&ML

1) Dr. Joshuva Arockia Dhanraj, with a collaborative interdisciplinary team from AI & Robotics and CSE (Data Science), has published the patent “System and Method for Predicting and Preventing Hospital-Acquired Infections using Digital Twin” under application No. 202641015888 A. The Inventors include Joshuva Arockia Dhanraj, Bhavya Lingampalli, M. Lakshmanan, Sriramkumar R., Godhandaraman T., Sugandha Saxena, Jayavrinda V. Vadakkeparambil, and Mithaguru.

2) Dr. Joshuva Arockia Dhanraj, through collaborative efforts with AI & Robotics and CSE (Data Science), has published the patent “System and Method for Adaptive Healthcare Robotics Using Reinforcement Learning, Multimodal Physiological Sensing, and Digital-Twin-Validated Intervention” under Application No. 202641015411 A. The Inventors are Joshuva Arockia Dhanraj, Bhavya Lingampalli, M Lakshmanan, Sriramkumar R, Pradeep Kumar K, Jayavrinda V Vadakkeparambil, Godhandaraman T, Abdul Haq Nalband, Trupthi Rao, Sugandha Saxena.

(1) PATENT APPLICATION/PUBLICATION		(2) Application No. 202641015888 A
(3) INDIAN		
(4) Date of Filing of Application: 12/03/2026		(5) Publication Date: 20/03/2026
(6) Title of the invention: System and Method for Predicting and Preventing Hospital-Acquired Infections using Digital Twin		
(7) International Classification	G16H 48/20 G16H 50/80 G16H 50/90 G16H 50/93 G16H 50/94 G16H 50/95 G16H 50/96 G16H 50/97 G16H 50/98 G16H 50/99	(1) Name of Applicant: Bharathiar University Address of Applicant: Bharathiar University, Heerikudi, Coimbatore Road, Begalore South, District-561 112, Karnataka India, Karnataka India (2) Name of Inventor: Joshuva Arockia Dhanraj Bhavya Lingampalli M Lakshmanan Sriramkumar R Godhandaraman T Sugandha Saxena Jayavrinda V Vadakkeparambil Mithaguru
(8) Priority Document No	NA	
(9) Priority Date	NA	
(10) Name of priority country	NA	
(11) International Application No	NA	
(12) Filing Date	12/03/2026	
(13) International Publication No	NA	
(14) Name of Applicant to Application Number	NA	
(15) Filing Date	NA	
(16) Divisional to Application Number	NA	
(17) Filing Date	NA	
(18) Abstract Title: System and Method for Predicting and Preventing Hospital-Acquired Infections Using Digital Twin. The invention discloses a system and method for predicting and preventing hospital-acquired infections using queue-based artificial intelligence and digital twin simulation. Environmental sensor data, patient location information, and other patient movement data are continuously collected and stored into a unified queue-based dataset (tagged to hospital zones). The hospital environment is modeled as a relational graph in which zones are nodes and adjacency, and mobility relationships are weighted edges. A queue-based intelligence engine employing a graph-based network, and a temporal forecasting model predicts zone-level infection risk exposures in absence of clinical evidence. A digital twin simulates infection propagation and evaluates preventive interventions before real-world execution. The system generates customized risk scores, automated alerts, and actionable recommendations within a secure deployment architecture, enabling predictive infection prevention and early intervention. No. of Pages: 25 No. of Claims: 9		

The Patent Office Journal No. 12/2026 Dated 20/03/2026

32459

(1) PATENT APPLICATION/PUBLICATION		(2) Application No. 202641015411 A
(3) INDIAN		
(4) Date of Filing of Application: 12/03/2026		(5) Publication Date: 20/03/2026
(6) Title of the invention: System and Method for Adaptive Healthcare Robotics Using Reinforcement Learning, Multimodal Physiological Sensing, and Digital-Twin-Validated Intervention		
(7) International Classification	A61B 5/00 A61B 5/02 B25J 9/16 A61B 5/11 G16H 48/20 G16H 50/80 G16H 50/90 G16H 50/93 G16H 50/94 G16H 50/95 G16H 50/96 G16H 50/97 G16H 50/98 G16H 50/99	(1) Name of Applicant: Bharathiar University Address of Applicant: Bharathiar University, Heerikudi, Coimbatore Road, Begalore South, District-561 112, Karnataka India, Karnataka India (2) Name of Inventor: Joshuva Arockia Dhanraj Bhavya Lingampalli M Lakshmanan Sriramkumar R Pradeep Kumar K Jayavrinda V Vadakkeparambil Godhandaraman T Abdul Haq Nalband Trupthi Rao Sugandha Saxena
(8) Priority Document No	NA	
(9) Priority Date	NA	
(10) Name of priority country	NA	
(11) International Application No	NA	
(12) Filing Date	12/03/2026	
(13) International Publication No	NA	
(14) Name of Applicant to Application Number	NA	
(15) Filing Date	NA	
(16) Divisional to Application Number	NA	
(17) Filing Date	NA	
(18) Abstract Title: System and Method for Adaptive Healthcare Robotics Using Reinforcement Learning, Multimodal Physiological Sensing, and Digital-Twin-Validated Intervention. The invention discloses a secure healthcare robot system integrating reinforcement-learning based mobility control, multimodal physiological sensing, predictive clinical analytics, and digital-twin-based safety validation to provide continuous patient monitoring and intervention support. The system operates a mobile robot platform with adaptive navigation, vision sensing suite for acquiring physiological and environmental parameters, and an edge-processing module for real-time signal analysis and anomaly detection. A reinforcement-learning controller adapts robot behavior to patient-specific conditions, while a reinforcement-learning twin validates intended actions prior to physical execution to ensure safety and compliance. The system further includes a cloud-based multi-agent coordination framework for managing clinical activities, enabling robots and backend analytics for coordinated care and hospital data management. The innovative modules applications including AI risk monitoring, emergency response, medication reminders, and rehabilitation assistance, thereby supporting patient safety, reducing caregiver workload, and supporting scalable deployment across clinical and home-care environments. No. of Pages: 25 No. of Claims: 9		

The Patent Office Journal No. 12/2026 Dated 20/03/2026

32455



Dr. Joshua Arockia Dhanraj
Professor
Department of AI&ML

1) Dr.. Joshua Arockia Dhanraj, along with a collaborative research team from AI & Robotics and CSE (Data Science), has published the patent “Autonomous Multi-Terrain Interplanetary Explorer with Reconfigurable Wheel–Leg Mobility” under Application No. 202641015413 A. The inventors are Joshua Arockia Dhanraj, Bhavya Lingampalli, M Lakshmanan, Sriramkumar R, Pradeep Kumar K, Jayavrinda V Vadakkeparambil, Godhandaraman T, Abdul Haq Nalband, Trupthi Rao, and Sugandha Saxena.

2) Dr. Joshua Arockia Dhanraj, in collaborative association with AI & Robotics and CSE (Data Science), has published the patent “A Swarm-Intelligence-Based Autonomous Robotic Ecosystem for Predictive Maintenance and Adaptive Self-Repair of Space Infrastructure” under Application No. 202641006308 A. The Inventors include Joshua Arockia Dhanraj, Bhavya Lingampalli, M Lakshmanan, Sriramkumar R, Trupthi Rao, Godhandaraman T, K Pradeep Kumar, Abdul Haq Nalband.

3) Dr. Joshua Arockia Dhanraj, together with a collaborative team from AI & Robotics and CSE (Data Science), has published the patent “A Self-Optimizing Mechatronic Actuation and Control System with Multi-Sensor Fusion and Self-Healing Mechanisms” under Application No. 202641012361 A. The Inventors are Joshua Arockia Dhanraj, Bhavya Lingampalli, M Lakshmanan, Sriramkumar R, Trupthi Rao, Godhandaraman T, Pradeep Kumar K, Souvik Ghosh





Dr. Biswa Mohan Sahoo
Professor
Department of AI&ML

Dr. Biswa Mohan Sahoo, Professor, CSE (AI&ML) has published a research article in the prestigious SCIE-indexed Q1 journal, Springer Nature Computing. The research work, titled “Remora Optimization Algorithm-Based Clustering Method in IoT-Enabled Sensor Networks,” presents a comprehensive optimization-based clustering approach aimed at enhancing energy efficiency, prolonging network lifetime, and improving overall performance in IoT-enabled wireless sensor networks.

The screenshot shows the Springer Nature Link interface for an article. At the top, there is a navigation bar with 'Springer Nature Link' on the left and 'Log in' on the right. Below this, there are links for 'a journal', 'Publish with us', 'Track your research', a search bar, 'Saved research', and a 'Cart' icon. The main content area features the article title 'Remora optimization algorithm-based clustering method in IoT enable sensor networks' in large white text on a dark blue background. To the right of the title is a small image of the journal cover. Below the title, it says 'Regular Paper | Published: 18 March 2026' and 'Volume 108, article number 50, (2026)'. There are links for 'Cite this article' and 'Save article'. On the right side, there are buttons for 'Computing', 'Aims and scope', and 'Submit manuscript'. Below the article title, there is a section for 'Access this article' with a button 'Log in via an institution'. Below that, there is a 'Subscribe and save' section with a 'Springer+' option starting from €37.37 /Month. The 'Abstract' section is partially visible at the bottom, starting with 'Internet of Things (IoT) enable wireless sensor networks (WSNs) is an emerging design that connects a multitude of devices to enable data exchange and intelligent decision-making. Energy economy is very important in IoT networks due to the limited resources and short battery life of these devices. Cluster-based routing has gained substantial acceptance as an effective method for improving energy efficiency in Internet of Things (IoT) networks. We propose a remora optimization algorithm for an energy-



Dr. A.A.Nippun Kumar
Associate Professor
Department of AI&ML

1) Dr. A. A. Nippun Kumar, Associate Professor, CSE (AI & ML) and Chair, IEEE Robotics and Automation Society (RAS) Bangalore Section, delivered an invited keynote address on 20th February 2026, at Sri Siddhartha Institute of Technology (SSIT), Tumakuru, during the inauguration of their IEEE RAS Student Branch Chapter (SBC). The event marked the formal launch of the RAS SBC at SSIT, aimed at fostering a strong robotics and automation culture among students. The session saw active participation from students of Robotics & AI, Electronics, and other engineering departments. Dr. Nippun Kumar's talk, titled "Getting Started with Robotics: Building Intelligent Machines in the AI Era," highlighted the evolving landscape of robotics, the integration of AI in intelligent systems, and a structured roadmap for students to build expertise through foundational learning, systems integration, and research engagement.

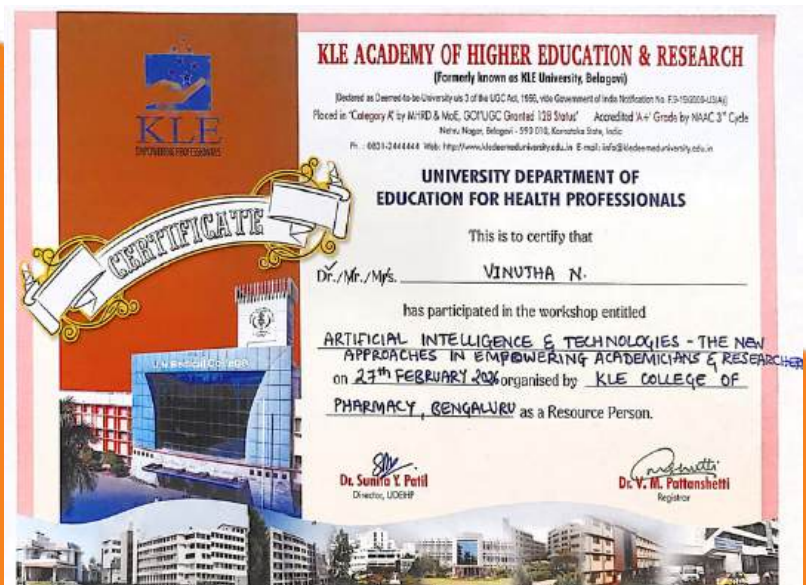
2) Dr. A. A. Nippun Kumar, Associate Professor, CSE (AI & ML) attended the "Conference Organizers Education Workshop - 2026" held on February 2, 2026, organized by the IEEE Bangalore Section.





Dr. Vinutha N
Associate Professor
Department of AI&ML

Dr. Vinutha N, Associate Professor, CSE (AI & ML), delivered a talk on “Using Artificial Intelligence to Make Teaching and Research Smarter and Easier” at the One-Day Workshop on Artificial Intelligence & Technologies – The New Approaches in Empowering Academicians & Researchers, held on 27th February 2026. The workshop was organized by the Department of Pharmaceutical Chemistry, KLE College of Pharmacy, Bengaluru, under the auspices of UDEHP, KAHER.





Dr. Vinutha N
Associate Professor
Department of AI&ML

Dr. Vinutha N, Associate Professor, CSE (AI & ML), served as a resource person at the 5-Day Faculty Development Programme (FDP) on “Advanced Artificial Intelligence & Machine Learning: Models, Applications and Research Perspectives” organized by the Department of MCA, Surana College. She delivered a session on “Exploring Generative AI and GPT”, where she covered the fundamentals of Generative AI, Large Language Models (LLMs), and their emerging applications in research and industry.

The screenshot shows a Zoom meeting interface. At the top, there are five video thumbnails for participants: Dr. Bharathi M P, Dr. Vinutha N, Dr. Gomathy Prathima E, Vidya Prasad, and Dr. Bharathi. Below the thumbnails, a slide is displayed. The slide content is as follows:

Surana College (Autonomous)
Department of MCA
(Accredited by NBA)

5 days Faculty Development Programme (FDP) on
“Advanced Artificial Intelligence & Machine Learning: Models, Applications and Research Perspectives”
9th to 13th March 2026

Day-3 Session-3: Resource Person

Dr. Vinutha N
Associate Professor, Dept of CSE (AI & ML)
Dayananda Sagar University | 13+ Years of Experience

Career Highlights

- PhD in Machine Learning for Healthcare; recipient of the Bahu Panditya Yajnaseni Award (2024).
- Best Paper Award at an international conference.
- Holder of multiple patents in AI health screening, cloud efficiency prediction, marine robotics, and driver safety.
- Author of high-impact journal papers and book chapters.
- Editor/reviewer for journals and conferences; member of IEEE and IAENG.

At the bottom of the slide, there is a navigation bar with icons for Participants (40), Chat (1), Reactions, Share Screen, Security, AI Companion, and More.



**Prof. Pavani Vittapalli,
Assistant Professor,
Department of CSE (AI & DS)**

1) Prof. Pavani Vittapalli, CSE (AI & DS), Dayananda Sagar University, participated in a Five-day National FDP on “Agentic AI: Design, Development & Real-World Applications.” The program was conducted by RNS Institute of Technology, Bengaluru, in association with Spoken Tutorial, Edu Pyramids, and SINE, IIT Bombay, from March 9–13, 2026.

2) Ms. Nikita Banerjee, CSE (AI & DS), Dayananda Sagar University, successfully completed a Five-Day FDP on “NLP Applications.” The program was organized by Sree Rama Engineering College in association with Pantech Solutions from March 10–14, 2026, enhancing expertise in Natural Language Processing.





Dr. Mude Nagarjuna Naik
Associate Professor
Department of AI&ML

Dr. Mude Nagarjuna Naik, Associate Professor, CSE (AI & ML), has successfully presented a research paper titled “Comparative Model Analysis for Early Detection of Breast Cancer Using Clinical Data” at the 4th International Conference on Intelligent Data Communication Technologies and Internet of Things (IDCIoT-2026). The conference was organized by Jawaharlal College of Engineering and Technology, Ottapalam, Kerala, India, during 4–6 February 2026. His work focused on evaluating and comparing different models for the early detection of breast cancer using clinical data, contributing to advancements in healthcare analytics and intelligent diagnostic systems.



Certificate of Presentation

This is to certify that

Mude Nagarjuna Naik

has successfully presented the paper titled

Comparative Model Analysis for Early Detection of Breast Cancer Using Clinical Data

at the 4th International Conference on

Intelligent Data Communication Technologies and Internet of Things (IDCIoT-2026)

organised by Jawaharlal College of Engineering and Technology

Ottapalam, Kerala, India during 4-6, February 2026.


Session Chair

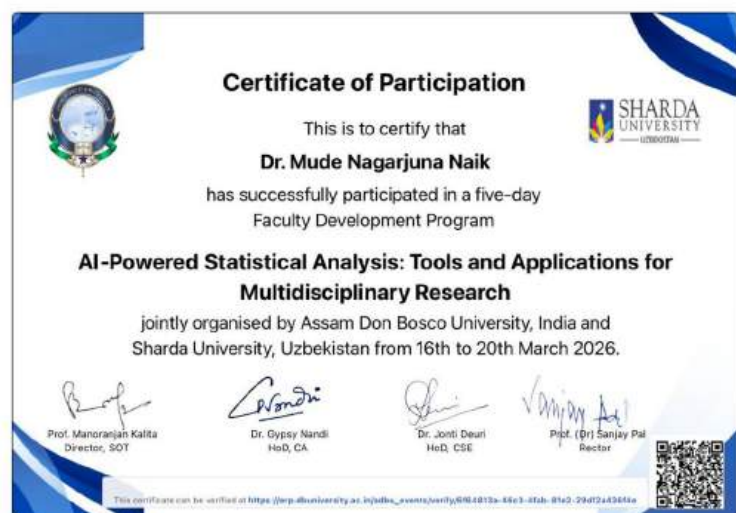

Conference Chair
Dr. N.Gunasekaran


General Chair
Dr. R. Gowri



Dr. Mude Nagarjuna Naik
Associate Professor
Department of AI&ML

- 1) Dr. Nagarjuna Naik, Associate Professor, CSE (AI & ML), successfully presented a research paper titled “Swin UNETR: A Novel Model of 3D Tumor Semantic Segmentation using Vision Transformers” at the prestigious international conference Next-Gen Quantum and Advanced Computing: Algorithms, Security, and Beyond (NQComp-2026).
- 2) Dr. Mude Nagarjuna Naik, Associate Professor, CSE (AI&ML), has successfully participated in a five-day Faculty Development Program, “AI-Powered Statistical Analysis: Tools and Applications for Multidisciplinary Research,” jointly organized by Assam Don Bosco University, India, and Sharda University, Uzbekistan, from 16th to 20th March 2026.





Dr. Princy Randhawa
Associate Professor
Department of AI&ML

- 1) Dr. Princy Randhawa, Associate Professor, CSE (AI&ML) served as a Session Chair at the 6th International Conference on Intelligent Systems and Machine Learning (ICISML–2026). The conference, organized by the School of Engineering and Technology, Nagaland University, Kohima Campus, was held on February 24–25, 2026. Her insightful guidance and academic leadership during the sessions, along with her enriching keynote address, significantly contributed to the success of the conference.
- 2) Dr. Princy Randhawa, Associate Professor, CSE (AI & ML), has successfully completed the Young Leader Development Program conducted by Manipal University Jaipur, in association with People in Business (India) LLP, Bangalore, during the period 2024–2025.





Dr. Princy Randhawa
Associate Professor
Department of AI&ML

3) Dr. Princy Randhawa, Associate Professor, CSE (AI & ML), has participated in the Conference Organizers Education Workshop (COEW) – 2026, organized by the IEEE Bangalore Section on 2nd February 2026. Her participation in this workshop highlights her commitment to enhancing academic event management skills and staying engaged with professional bodies, contributing to the effective organization of conferences and knowledge-sharing platforms.

4) Dr. Princy Randhawa, Associate Professor, CSE (AI & ML), served as Session Chair of the 6th IEEE International Conference on Recent Trends in Computer Science and Technology (ICRTCST-2026) held on 29th and 30th January 2026 at RVSCET, Jharkhand, India.





Dr. Princy Randhawa
Associate Professor
Department of AI&ML

5) Dr. Princy Randhawa, Associate Professor, CSE (AI & ML), served as Program Track Chair at the IEEE Innovations in Machine, Engineering, and Digital (IMED) Conference 2026 held on March 6-7, 2026, organized at Jesselton University College, Malaysia, and hosted by World Research Union, Malaysia.

6) Dr. Princy Randhawa, Associate Professor, CSE (AI & ML), delivered the keynote address titled “Human Activity Detection using Machine Learning Methods from Wearable Sensors” at the IEEE Innovations in Machine, Engineering and Digital (IMED) Conference 2026 held on March 6-7, 2026, organized at Jesselton University College, Malaysia, and hosted by World Research Union, Malaysia.





Dr. Manikandan M
Assistant Professor
Department of AI&ML

- 1) Dr. Manikandan M, Assistant Professor, CSE (AI & ML), has successfully published a research paper titled “Integrating Federated Learning with Distributed Security for IoT-Driven Sport Technologies” in the SCIE-indexed Q3 journal, International Journal of Antennas and Propagation.
- 2) Dr. Manikandan M, Assistant Professor, CSE (AI & ML), has successfully published a research paper titled “AI-Driven Optical Metamaterial Sensors with BiCMOS Integration for Secure Mobile IoT Networks.”

Antennas and Propagation
Research Article
 National Journal of Antennas and Propagation, ISSN: 2582-2659 Vol. 8, No. 1, 2026 (pp.215-220)
 WWW.ANTENNAJOURNAL.COM

Integrating Federated Learning with Distributed Security for IoT-Driven Sports Technologies

T. Reenaraj^{1*}, Kishore K², Manikandan Moovendran³, V. Kalpana⁴, S. Balakrishnan⁵, S N V J Devi Kosuru⁶

¹Associate Professor, Department of ECE, Moodlakatte Institute of Technology, Moodlakatte, Kundapura, Udappudi District.
²Assistant Professor, Department of CSE(Data Science), Vidya Jyothi Institute of Technology,Hyderabad, Telangana.
³Department of Computer Science and Engineering (AIBML), School of Engineering, Dayananda Sagar University, Bengaluru, Karnataka, India.
⁴Professor, Department of Computer Science and Engineering, Vel Tech Rangarajan Dr. Sagunthala R&D Institute of Science and Technology, Avadi, Chennai.
⁵Professor, Department of Computer Science and Engineering, Aarupada Veedu Institute of Technology, Vinayaka Mission's Research Foundation (DU), Chennai.
⁶Assistant Professor, Department Of Cse, K L University - Klef, Vaddeswaram, Guntur.

KEYWORDS:
 Federated Learning (FL), Distributed Security, IoT-Driven Sports Technologies, Blockchain-Assisted Privacy, FedSecure Aggregation Algorithm (FSA-Aig).

ABSTRACT
 Increasing numbers of IoT devices and smart arenas along with athlete monitoring systems have formed data-rich environments in order to support high performance and minimize accidents. Centralized learning architectures can introduce delays in communication, security threats and privacy violations when dealing with sensitive data types like biometric or geo-location data. In this context, we propose the FedSecure-Sports framework, which solves these problems by introducing Walking in Federated Learning (FL) mechanisms and Distributed Security Mechanism to construct the sports ecosystems supported by IoT. The proposed algorithm employs the FedSecure Aggregation Algorithm (FSA-Aig), grounding on a light-weighted homomorphic encryption, blockchain consensus and weighted federated model updates. This enables the training of a model over remote devices without sharing raw data, verifying updates, and imposes security against tampering by malicious attackers. FedSecure-Sports achieves superior anomaly detection accuracy as well the ability to reduce communication cost (by 15%) and protect privacy (18-22%) compared with FL and centralized methods on standard IoT sports datasets. These findings support that our solution improves the reliability, robustness, and scalability of realtime sports analysis. In conclusion, FedSecure-Sports proposes a safe, privacy-protecting, and efficient IoT-based sports technology future.

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DOI:
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Antennas and Propagation
Research Article
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 WWW.ANTENNAJOURNAL.COM

AI-Driven Optical Metamaterial Sensors with BiCMOS Integration for Secure Mobile IoT Networks

Sureshkumar S^{1*}, S. P. Sarthoshkumar¹, Manikandan Moovendran¹, Vijayanand K²

¹Assistant Professor, Department of Computer Science and Engineering, P. A. College of Engineering and Technology, Palacchi, Tamil Nadu-602002.
²Assistant Professor (SG), Department of Computer Science and Engineering, School of Computing, Vel Tech Rangarajan Dr. Sagunthala R&D Institute of Science and Technology, Avadi, Chennai, Tamilnadu, India - 600062.
³Department of Computer Science and Engineering (AIBML), School of Engineering, Dayananda Sagar University, Bengaluru, Karnataka, India.
⁴Assistant Professor, Department of Computer Technology, Dr.M.G.P. arts and science college, Coimbatore, Tamil Nadu 641048

KEYWORDS:
 Optical Metamaterials, BiCMOS Integration, AI-Driven Sensing, Secure IoT Networks, Plasmonic Sensors.

ABSTRACT
 As the number of mobile Internet of Things networks continues to increase rapidly, there is a significant need for sensing systems that are not only very sensitive but also exceedingly secure and use negligible amounts of energy. It is possible that traditional sensor systems will not function well in surroundings that are not predictable because they do not always record data reliably and do not always recognize items in the right manner. This paper proposes an artificial intelligence-facilitated Optical Metamaterial Sensors paired with BiCMOS (Bipolar Complementary Metal-Oxide-Semiconductor) technology (AI-MS-BC) that have the potential to assist in addressing these issues. The proposed method utilizes deeply learned models that have been modified to enable real-time data examination and problem identification. This is possible because plasmonic metamaterials can alter their response to light. The sensor is a component of a BiCMOS architecture, which is a combination of complementary metal-oxide semiconductors, which have low-power logic, and bipolar transistors, which provide rapid analog performance. This method will enable the use of the Internet of Things in a manner that is risk-free, straightforward, and easy to expand. The results of laboratory simulations indicate that this system is 36.5 more sensitive than conventional CMOS-only systems and has 48% fewer false positives than those regular systems. The technology also ensures that robust encryption is used, and it allows for the possibility of risk reduction over time through the utilization of dynamic control based on artificial intelligence. The research findings indicated that integrating artificial intelligence (AI), BiCMOS, and metamaterials would result in mobile Internet of Things (IoT) detection networks that are superior in terms of intelligence, safety, and efficiency.

ARTICLE HISTORY
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1. INTRODUCTION
 The rise of Internet of Things (IoT) nodes, particularly in mobile and edge computing, has made it easier for smart devices to monitor, analyze, and send data. As mobile Internet of Things networks become bigger and more intricate, it gets tougher to keep data safe, get accurate measurements, and save energy[1-2]. There have been some advancements in typical sensing systems aren't flexible enough to handle the constantly changing electromagnetic fields in mobile Internet of Things environments. When it comes to silicon sensors



Dr. Govind Kumar Pandey
Assistant Professor
Department of AI&ML

Dr. Govind Kumar Pandey, Assistant Professor, CSE (AI&ML) successfully presented a research paper titled “A Human-Centric Machine Learning Architecture for Transparent Automated Decision Making” at the International Conference on “Integrating Disciplines: An Approach towards Innovations and Better Future”. The conference was organized by Datta Meghe Institute of Management Studies, Nagpur, and held on 20th and 21st February 2026. His research emphasizes the development of transparent and human-centric AI systems, contributing to the growing need for explainability and trust in automated decision-making processes. This achievement reflects continued dedication towards impactful research and innovation in emerging technologies.





Prof. Trupthi Rao
Assistant Professor
Department of AI&ML

Prof. Trupthi Rao, Assistant Professor, CSE (AI&ML) Rao participated in a Five-Day Faculty Development Programme on “Artificial Intelligence and Internet of Things” organized by the Department of MCA, RNS Institute of Technology, Bengaluru. The programme was conducted from 13th to 18th March 2026. The programme provided valuable insights into current trends, research directions, and practical applications, contributing to academic and professional development in the fields of Artificial Intelligence and IoT.





Prof. Nivetha R
Assistant Professor
Department of AI&ML

Prof. Nivetha R, Assistant Professor, CSE (AI & ML), attended a Business World event featuring a panel on “Artificial Intelligence and the future of the education system.” The session explored AI integration in academics and emerging advancements. Keynote speaker Buddha Chandrasekhar (CEO, Anuvadhini) shared insights on AI-driven and multilingual education initiatives, while Sanjay Fuloki (Director, ICIAF) discussed innovation in AI-based education. The panel, which included Vice Chancellors and representatives from IIT and IIIT, highlighted opportunities for collaboration in research and AI-driven academic programs, offering valuable perspectives on the future of higher education.





Prof. Bhuvana Mohini T.N
Assistant Professor
Department of AI&ML

- 1) Prof. Bhuvana Mohini T. N, Assistant Professor, CSE (AI & ML), attended the “Ekatma Manava Darshan – Bharat’s Worldview Conference” held on 25th March 2026 at Mysuru, Karnataka
- 2) Prof. Bhuvana Mohini T N, Assistant Professor, CSE (AI & ML), has contributed a book chapter titled “AI, IoT, and Blockchain for Medical Supply Chain Management in the Healthcare Domain: Case Studies” in the book Industry 6.0 and Digital Transformation in Supply Chain, Assets, and Services, published by IGI Global.



2025, 545 FM AI, IoT, and Blockchain for Medical Supply Chain Management in the Healthcare Domain-Case Studies: Business & Management Book Chapter / IGI Global eJournal-UM/AM/MS

AI, IoT, and Blockchain for Medical Supply Chain Management in the Healthcare Domain: Case Studies

T. N. Bhuvana Mohini (Dayananda Sagar University, India)

Source Title: *Industry 6.0 and Digital Transformation in Supply Chain, Assets, and Services*
Copyright: © 2026 | Pages: 30
DOI: 10.4018/979-8-3373-9554-8.ch011

Abstract

The Industrial Revolution has continually shaped supply chain management (SCM), with the fourth revolution introducing technologies like IoT, blockchain, and AI to enhance efficiency, security, and transparency. This chapter explores how these technologies address challenges in healthcare SCM, such as inventory mismanagement, delivery delays, and counterfeit drugs. AI enables predictive analytics for demand forecasting and logistics optimization. Blockchain provides secure, transparent data sharing, ensuring traceability. IoT allows real-time monitoring of inventory and cold chain conditions. Case studies highlight practical applications of these innovations. Despite hurdles like high costs and data privacy concerns, the integration of AI, IoT, and blockchain promises a more resilient, efficient, and patient-centered healthcare ecosystem.

Complete Chapter List

Search this Book: Full text search terms

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Preface
Thangavel Murugan, N. Nasurudeen Ahamed, Varalakshmi P.

Chapter 1
Revolutionizing Supply Chain Through Industry 6.0 Technologies: Traceability, Transparency, and Security (pages 1-32)
Md Mehedi Hasan Emon, Tahsina Khan
This chapter explores the transformative impact of Industry 6.0 technologies on supply chain management in the healthcare domain.

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<https://www.igi-global.com/chapter/ai-and-blockchain-for-medical-supply-chain-management-in-the-healthcare-domain/61602>

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Prof. Bhuvana Mohini T.N
Assistant Professor
Department of AI&ML

3) Prof. Bhuvana Mohini T N, Assistant Professor, CSE (AI & ML), has published a research paper titled "Urban Growth Forecasting and LULC Dynamics in Bangalore Using Random Forest Classification and Cellular Automata on Dynamic World Satellite Data."

4) Prof. Bhuvana Mohini T N, Assistant Professor, CSE (AI & ML), has published a research paper titled "Enhanced Hybrid Deep Learning Model for Alzheimer's Disease Diagnosis" in IEEE Xplore, as part of the International Conference on Communication, Computing and Internet of Things (IC3IT).



2025 International Conference on Communication, Computer, and Information Technology (IC3IT)

Enhanced Hybrid Deep Learning Model for Alzheimer Disease Diagnosis

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Abstract — Alzheimer's disease (AD), a major cause of dementia, impairs memory and cognition, making early and accurate detection crucial. This study proposes a Hybrid U-Net architecture for hippocampus segmentation and Alzheimer's classification, aiming to enhance neuroimaging-based diagnosis. Two publicly available brain MRI datasets were employed: one for binary classification and hippocampal segmentation, and another for multi-class classification across dementia stages. A 2D U-Net achieved a Dice Coefficient of 83.85%, accuracy of 99.68%, and specificity of 99.75% for hippocampal segmentation. For classification, Hybrid U-Net replacing decoder layers with global average pooling achieved 94.07% accuracy, 99.13% sensitivity, 94.28% specificity, and an F1-score of 94.87% on Dataset A; and 84.8% accuracy, 99.9% sensitivity, 84.39% specificity, and an F1-score of 84.66% on Dataset B. Experimental results show that the proposed framework achieves high segmentation accuracy and strong classification performance, outperforming conventional architectures. The findings demonstrate the model's potential for enhancing early-stage detection and precise staging of Alzheimer's disease, contributing to improved diagnostic decision-making in clinical practice.

Keywords: Alzheimer disease, MRI scans, U-net architecture, Segmentation, Classification

I. INTRODUCTION

Alzheimer's disease is a neurodegenerative disorder impacting millions of lives globally, causing memory loss and reduced thinking and daily activities, with symptoms increasing in severity [1]. Neurologists classify Alzheimer's disease into pre-clinical, mild cognitive impairment, and dementia stages, which are further divided into mild, moderate, and severe phases [2]. The hippocampus is the first region that will be affected in Alzheimer's disease. Hippocampal atrophy is an established imaging biomarker used for AD diagnosis [4]. An ideal biomarker is affordable, non-invasive, and minimally harmful to patients. Tracking biomarkers over time also provides insights into disease progression and helps evaluate the effectiveness of treatments [5]. Many researchers are investing significant effort in the diagnosis of AD using various data sources and advanced techniques, often combined with cognitive tests and clinical assessments [6]. Imaging techniques are widely used in AD research, though they typically detect general pathological changes rather than AD-specific features. MRI is particularly valuable for detecting Alzheimer's disease, offering crucial insights into structural brain changes that enhance the understanding provided by other biomarkers [7]. MRI provides detailed images of brain structures, making it a significant tool in Alzheimer's detection. However, distinguishing Alzheimer's-related atrophy from

normal aging can be challenging, and issues such as patient movement during scans can affect image quality [8]. Despite its excellent spatial resolution and non-invasive nature, MRI's reliability can be influenced by factors such as patient mobility and metabolic changes. Although machine learning algorithms have been applied to diagnose Alzheimer's disease using MRI data, different approaches often yield varying results [9]. However, existing methods often suffer from limited accuracy, difficulty in generalizing across diverse datasets, and challenges in classifying multiple stages of dementia. Traditional deep learning approaches may not efficiently extract both local and global contextual features necessary for robust performance. To overcome these challenges, the major contribution of this work lies in proposing a U-Net based deep learning framework that effectively does segmentation and classification for improved Alzheimer's diagnosis from MRI data. The main aim of this study is to design and develop models using image processing and deep learning techniques to segment and classify brain image data for the early detection of Alzheimer's disease and helps in generalizing the model for different data. The Alzheimer's disease diagnosis process is described as a comprehensive workflow for processing two distinct datasets using U-Net architectures tailored for AD analysis, as illustrated in Figure 1. Dataset A is pre-processed to ensure the input images are ready for analysis. Following preprocessing, a Hybrid U-Net is trained for classification tasks on the two datasets, while a 2D U-Net model is designed for segmentation tasks on Dataset A. Performance evaluation is conducted using various evaluation metrics.

II. RELATED WORKS

Several studies have explored Alzheimer's disease (AD) diagnosis using brain MRI data, primarily focusing on

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Prof. Upasana Shil
Assistant Professor
Department of AI&ML

Prof. Upasana Shil, Assistant Professor, CSE (AI & ML), has successfully presented a research paper titled “Securing Electronic Health Records Against Quantum-Era Attacks: A Cryptographic Security Analysis” at the International Conference on Mathematical Sciences and Computational Intelligence (ICMSCI-2026), held from 20–22 February 2026. The conference was organized by the Department of Mathematics, P.G.D.A.V. College, University of Delhi, in collaboration with the Faculty of Mathematical Sciences, University of Delhi, Indian Institute of Technology (IIT) Mandi, and National Institute of Technology (NIT) Uttarakhand. Her contribution highlights significant advancements in securing electronic health records against emerging quantum threats.

The certificate is framed with decorative borders and contains the following text and logos:

DEPARTMENT OF MATHEMATICS
P.G.D.A.V. COLLEGE, UNIVERSITY OF DELHI
FACULTY OF MATHEMATICAL SCIENCES, UNIVERSITY OF DELHI
INDIAN INSTITUTE OF TECHNOLOGY (IIT), MANDI &
NATIONAL INSTITUTE OF TECHNOLOGY (NIT), UTTARAKHAND

ICMSCI-2026
INTERNATIONAL CONFERENCE ON
MATHEMATICAL SCIENCES AND
COMPUTATIONAL INTELLIGENCE

— Certificate of Appreciation —

This is to certify that
Prof. Upasana Shil, Dayananda Sagar University

presented a research paper titled “**Securing Electronic Health Records Against Quantum-Era Attacks: A Cryptographic Security Analysis**” at the International Conference on Mathematical Sciences and Computational Intelligence (ICMSCI-2026), held during 20-22 February, 2026, organized by Department of Mathematics, P.G.D.A.V. College, University of Delhi, in association with Faculty of Mathematical Sciences, University of Delhi, Indian Institute of Technology (IIT), Mandi & National Institute of Technology (NIT), Uttarakhand.

Sponsors:
Government Of India, Ministry of Statistics and Programme Implementation
Anusandhan National Research Foundation

Signatories:
Prof. Darvinder Kumar, Principal
Dr. Shubham Jaiswal, Conference Chair & Convener
Dr. Nav Shakti Mishra, Organizing Secretary

Faculty from CSE (AI & ML) department published a patent titled "Multilevel Group-Synchronized Health Diagnostic System." The patent was published on 20/03/2026, focusing on advanced health monitoring using multimodal physiological data. The inventors of this patent are Dr. Hariharan S. and Dr. Mahalakshmi P. from the Mathematics department and Dr. M. Lakshmanan from the CSE (AI&ML) department.

(12) PATENT APPLICATION PUBLICATION		(21) Application No.202641015412 A
(19) INDIA		
(22) Date of filing of Application :12/02/2026		(43) Publication Date : 20/03/2026
(54) Title of the invention : Multilevel Group-Synchronized Health Diagnostic System		
(51) International classification	:A61B 5/00, G16H 50/30, G16H 50/20, A61B 5/0205, G16H 40/67	(71)Name of Applicant : 1)Dayananda Sagar University Address of Applicant :Devarakaggalhalli, Harohalli, Kanakapura Road,Bengaluru South District-562 112,Karnataka,India, Karnataka India
(31) Priority Document No	:NA	(72)Name of Inventor : 1)Hariharan S 2)Mahalakshmi P 3)M Lakshmanan
(32) Priority Date	:NA	
(33) Name of priority country	:NA	
(86) International Application No	:	
Filing Date	:01/01/1900	
(87) International Publication No	:NA	
(61) Patent of Addition to Application Number	:NA	
Filing Date	:NA	
(62) Divisional to Application Number	:NA	
Filing Date	:NA	
(57) Abstract : Title: Multilevel Group-Synchronized Health Diagnostic System The present invention discloses a multi-level health diagnostic system for early detection of illness, physiological fatigue, and metabolic instability in individuals and organized groups. The system integrates multimodal physiological data acquired from wearable devices, smart weight measurement units, and privacy-preserving voice rhythm analysis. Collected data are preprocessed and analyzed using predictive metabolic growth modeling to estimate expected physiological behavior and quantify individual deviation. In addition to individual assessment, the system performs group-level comparative evaluation using structured correlation and graph-based analysis to identify coordinated physiological anomalies within a shared environment. A unified analytical framework combines individual and group indicators to classify health risk levels and generate timely alerts and actionable insights. The invention enables proactive health monitoring and early warning in collective settings such as sports teams, classrooms, and group activity environments, overcoming the limitations of individual-only health monitoring systems. No. of Pages : 21 No. of Claims : 7		

Faculties from CSE (AI & ML) department published a patent titled "Biomarkers and Generative Inference based Precision Psychiatry System and Method Thereof". This patent was published on 20/03/2026 and introduces a precision psychiatry platform using AI and machine learning. The inventors include the following Professors: Hanumanth Sastry Sistla, Jayavrinda V Vadakkeparambil, Bahubali Shiragapur, Senthil Kumar Angappan, Gopal Das, M Lakshmanan, Abdul Haq Nalband, Joshuva Arockia Dhanraj, and Sriramkumar R.

(12) PATENT APPLICATION PUBLICATION		(21) Application No.202641025843 A
(19) INDIA		
(22) Date of filing of Application :05/03/2026		(43) Publication Date : 20/03/2026
(54) Title of the invention : Biomarkers and Generative Inference based Precision Psychiatry System and Method Thereof		
(51) International classification	:G16H 50/20, G16H 10/60, G16H 50/70, G16H 20/70, G06N 5/04	(71)Name of Applicant : 1)Dayananda Sagar University Address of Applicant :Devarakaggalhalli, Harohalli, Kanakapura Road Bengaluru South District-562112, Karnataka, India Karnataka India
(31) Priority Document No	:NA	(72)Name of Inventor : 1)Hanumanth Sastry Sistla 2)Jayavrinda V Vadakkeparambil 3)Bahubali Shiragapur 4)Senthil Kumar Angappan 5)Gopal Das 6)M Lakshmanan 7)Abdul Haq Nalband 8)Joshuva Arockia Dhanraj 9)Sriramkumar R
(32) Priority Date	:NA	
(33) Name of priority country	:NA	
(86) International Application No	:	
Filing Date	:01/01/1900	
(87) International Publication No	:NA	
(61) Patent of Addition to Application Number	:NA	
Filing Date	:NA	
(62) Divisional to Application Number	:NA	
Filing Date	:NA	
(57) Abstract : Title: Biomarkers and Generative Inference based Precision Psychiatry System and Method Thereof The present technology discloses a precision psychiatry platform for personalized treatment of psychological disorders using machine learning and generative artificial intelligence. The system integrates multimodal neurocognitive and digital biomarkers, personalized digital phenotyping, and privacy-preserving retrieval-augmented generation with de-identification applied prior to embedding to prevent identity leakage. A hybrid multi-model routing layer dynamically balances privacy constraints, reasoning complexity, and latency. A clinical safety and escalation engine and a clinical rules engine map generative inferences to treatment guidance and ensure real-time oversight. Enforceable patient consent is implemented using smart contracts, and blockchain-anchored audit mechanisms provide tamper-resistant traceability of decisions and model lifecycle events. The platform further incorporates drift monitoring, clinician-in-the-loop reinforcement learning from human feedback, and multimodal multilingual interaction, thereby enabling a secure, explainable, and clinically interoperable precision psychiatry system for individualized diagnosis, prognosis, and treatment planning. No. of Pages : 24 No. of Claims : 9		

Faculties from the CSE (AI & ML) department published a patent titled "System and Method for Multimodal Dual-Location Elder Health Diagnostics for Passive Early Detection of Systemic and Respiratory Illness." The patent was published on 20/03/2026 and focuses on non-invasive monitoring for elderly healthcare. The inventors are M Lakshmanan, Sriramkumar R, Jayavrinda V Vaddakeparambil, Joshuva Arockia Dhanraj, Mude Nagarjuna Naik, Gowdham C, Abdul Haq N, and Trupthi Rao.

(12) PATENT APPLICATION PUBLICATION	(21) Application No.202641003223 A
(19) INDIA	
(22) Date of filing of Application :12/01/2026	(43) Publication Date : 20/03/2026
(54) Title of the invention : System and Method for Multimodal Dual-Location Elder Health Diagnostics for Passive Early Detection of Systemic and Respiratory Illness	
(51) International classification	:A61B 5/00, A61B 5/11, A61B 5/08, A61B 5/01, A61B 5/0205
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No	:
Filing Date	:01/01/1900
(87) International Publication No	:NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA
(71) Name of Applicant :	1)Dayananda Sagar University Address of Applicant :Devarakaggalahalli, Harohalli, Kanakapura Road,Bengaluru South District-562 112,Karnataka,India. Karnataka India
(72) Name of Inventor :	1)M Lakshmanan 2)Sriramkumar R 3)Jayavrinda V Vaddakeparambil 4)Joshuva Arockia Dhanraj 5)Mude Nagarjuna Naik 6)Gowdham C 7)Abdul Haq N 8)Trupthi Rao
(57) Abstract :	
Title: System and Method for Multimodal Dual-Location Elder Health Diagnostics for Passive Early Detection of Systemic and Respiratory Illness The present disclosure pertains to a multimodal elder-health diagnostic system for continuous, passive, and non-invasive monitoring of physiological and biomechanical parameters to enable early detection of systemic or respiratory illness indicators in elderly individuals. The system integrates a hearing-aid-based sensing module configured to acquire respiratory acoustics, bone-conducted vibration signatures, and tympanic-proximal temperature trends with a floor-mounted pressure-thermal sensing mat configured to acquire gait biomechanics, balance characteristics, plantar pressure distribution, and plantar thermal patterns. Captured signals are locally processed to generate compact, modality-specific feature embeddings that are temporally aligned using timestamp synchronization. A multimodal fusion engine employing a cross-attention transformer correlates heterogeneous head-level and foot-level physiological indicators to generate a personalized illness risk score based on deviation from an individual baseline. The system operates without user interaction, preserves privacy by transmitting only processed embeddings, and provides early-warning health insights suitable for home-care, assisted-living, clinical monitoring, and remote healthcare environments.	
No. of Pages : 23 No. of Claims : 10	

Faculties from CSE (AI & ML) department published a patent titled "Autonomous Multimodal Intelligence System with Cross-Modal Attention and Bio-Physiological Root-Zone Digital Twin for Real-Time Rice Yield and Grain Quality Optimization." This patent was published on 20/03/2026 and addresses smart agriculture using AI-driven systems. The inventors include Godhandaraman T, Senthil Kumar Angappan, Shaila S G, M Lakshmanan, Joshuva Arockia Dhanraj, Gowdham C, Sriramkumar R, U Pavan Kumar, A Vegi Fernando, and Mithaguru.

(12) PATENT APPLICATION PUBLICATION	(21) Application No.202641008201 A
(19) INDIA	
(22) Date of filing of Application :28/01/2026	(43) Publication Date : 20/03/2026
(54) Title of the invention : Autonomous Multimodal Intelligence System with Cross-Modal Attention and Bio-Physiological Root-Zone Digital Twin for Real-Time Rice Yield and Grain Quality Optimization	
(51) International classification	G06N 3/08, A01B 79/00, G06N 3/04, A01G 22/22, G06V 10/764
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No	:
Filing Date	:01/01/1900
(87) International Publication No	:NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA
(71) Name of Applicant :	1)Dayananda Sagar University Address of Applicant :Devarakaggalahalli, Harohalli, Kanakapura Road,Bengaluru South District-562 112,Karnataka,India. Karnataka India
(72) Name of Inventor :	1)Godhandaraman T 2)Senthil Kumar Angappan 3)Shaila S G 4)M Lakshmanan 5)Joshuva Arockia Dhanraj 6)Gowdham C 7)Sriramkumar R 8)U Pavan Kumar 9)A Vegi Fernando 10)Mithaguru
(57) Abstract :	
Title: Autonomous Multimodal Intelligence System with Cross-Modal Attention and Bio-Physiological Root-Zone Digital Twin for Real-Time Rice Yield and Grain Quality Optimization This system describes an autonomous, multimodal agricultural intelligence platform for real-time prediction, diagnosis, and optimization of rice yield and grain quality. It integrates heterogeneous agricultural data, including paddy field imagery, soil parameters, and climatic time-series collected from field-deployed sensors and imaging devices. Modality-specific neural encoders extract feature representations that are dynamically fused using a cross-modal attention mechanism informed by crop growth stage and environmental context. A biophysiological root-zone digital twin models subsurface processes such as nutrient uptake, moisture transport, and stress responses, enabling biologically informed predictions and early stress detection. The system supports sensor deficiency compensation through cross-modal inference to ensure fault-tolerant operation. Based on fused data and digital twin outputs, it performs stress diagnosis, yield and quality prediction, and closed-loop agronomic optimization actions, providing a scalable solution for intelligent rice cultivation management.	
No. of Pages : 20 No. of Claims : 9	

Faculties from CSE (AI & ML) department published a patent titled “Autonomous Multimodal Intelligence System with Cross-Modal Attention and Bio-Physiological Root-Zone Digital Twin for Real-Time Rice Yield and Grain Quality Optimization”. This patent was published on 20/03/2026 and addresses smart agriculture using AI-driven systems. The inventors include Godhandaraman T, Senthil Kumar Angappan, Shaila S G, M Lakshmanan, Joshuva Arockia Dhanraj, Gowdham C, Sriramkumar R, U Pavan Kumar, A Vegi Fernando, and Mithaguru.

(12) PATENT APPLICATION PUBLICATION		(21) Application No.202641008201 A
(19) INDIA		
(22) Date of filing of Application :28/01/2026		(43) Publication Date : 20/03/2026
(54) Title of the invention : Autonomous Multimodal Intelligence System with Cross-Modal Attention and Bio-Physiological Root-Zone Digital Twin for Real-Time Rice Yield and Grain Quality Optimization		
(51) International classification	:G06N 3/08, A01B 79/00, G06N 3/04, A01G 22/22, G06V 10/764	(71)Name of Applicant : 1)Dayananda Sagar University Address of Applicant :Devarakaggalhalli, Harohalli, Kanakapura Road,Bengaluru South District-562 112,Karnataka,India, Karnataka India
(31) Priority Document No	:NA	(72)Name of Inventor : 1)Godhandaraman T 2)Senthil Kumar Angappan 3)Shaila S G 4)M Lakshmanan 5)Joshuva Arockia Dhanraj 6)Gowdham C 7)Sriramkumar R 8)U Pavan Kumar 9)A Vegi Fernando 10)Mithaguru
(32) Priority Date	:NA	
(33) Name of priority country	:NA	
(86) International Application No	:	
Filing Date	:01/01/1900	
(87) International Publication No	:NA	
(61) Patent of Addition to Application Number	:NA	
Filing Date	:NA	
(62) Divisional to Application Number	:NA	
Filing Date	:NA	
(57) Abstract : Title: Autonomous Multimodal Intelligence System with Cross-Modal Attention and Bio-Physiological Root-Zone Digital Twin for Real-Time Rice Yield and Grain Quality Optimization This system describes an autonomous, multimodal agricultural intelligence platform for real-time prediction, diagnosis, and optimization of rice yield and grain quality. It integrates heterogeneous agricultural data, including paddy field imagery, soil parameters, and climatic time-series collected from field-deployed sensors and imaging devices. Modality-specific neural encoders extract feature representations that are dynamically fused using a cross-modal attention mechanism informed by crop growth stage and environmental context. A biophysiological root-zone digital twin models subsurface processes such as nutrient uptake, moisture transport, and stress responses, enabling biologically informed predictions and early stress detection. The system supports sensor deficiency compensation through cross-modal inference to ensure fault-tolerant operation. Based on fused data and digital twin outputs, it performs stress diagnosis, yield and quality prediction, and closed-loop agronomic optimization actions, providing a scalable solution for intelligent rice cultivation management.		
No. of Pages : 20 No. of Claims : 9		

Faculties from CSE (AI & ML) department published a patent titled “Autonomous Multimodal Intelligence System with Cross-Modal Attention and Bio-Physiological Root-Zone Digital Twin for Real-Time Rice Yield and Grain Quality Optimization”. This patent was published on 20/03/2026 and addresses smart agriculture using AI-driven systems. The inventors include Godhandaraman T, Senthil Kumar Angappan, Shaila S G, M Lakshmanan, Joshuva Arockia Dhanraj, Gowdham C, Sriramkumar R, U Pavan Kumar, A Vegi Fernando, and Mithaguru.

(12) PATENT APPLICATION PUBLICATION		(21) Application No.202641012363 A
(19) INDIA		
(22) Date of filing of Application :05/02/2026		(43) Publication Date : 20/03/2026
(54) Title of the invention : A Pattern-Driven Deep Learning Time-Optimized Crop Yield Prediction System		
(51) International classification	:G06Q 50/02, G06N 3/08, G06N 3/04, G06V 10/764, G06V 10/774	(71)Name of Applicant : 1)Dayananda Sagar University Address of Applicant :Devarakaggalhalli, Harohalli, Kanakapura Road,Bengaluru South District-562 112,Karnataka,India, Karnataka India
(31) Priority Document No	:NA	(72)Name of Inventor : 1)Godhandaraman T 2)Senthil Kumar Angappan 3)Shaila S G 4)M Lakshmanan 5)Joshuva Arockia Dhanraj 6)Gowdham C 7)Sriramkumar R 8)U Pavan Kumar 9)A Vegi Fernando 10)Mithaguru
(32) Priority Date	:NA	
(33) Name of priority country	:NA	
(86) International Application No	:	
Filing Date	:01/01/1900	
(87) International Publication No	:NA	
(61) Patent of Addition to Application Number	:NA	
Filing Date	:NA	
(62) Divisional to Application Number	:NA	
Filing Date	:NA	
(57) Abstract : Title: A Pattern-Driven Deep Learning Time-Optimized Crop Yield Prediction System A system for agricultural monitoring and yield prediction comprising: (101): Capturing unit configured to capturing and converting the visual information into digital format, (102): Central processor operative to processing and featuring the extracted visual information, (103): Transceiver configured to Transmission of processed data to the external device or the end user and (104): Memory for Storing the end result in the cloud server (optional). The system, wherein the Central processor further comprising: (201): Image processing pre-module operative to prepare images for feature extraction, (202): Feature extraction module configured to extract phenotypic feature vectors, (203): Pattern evolution vector mapping (PEVM) module configured to simulate crop growth transitions, (204): Adaptive temporal patter fusion (ATPF) module configured to combine early & late-stage features, (205): Latency aware early exit (LAE) module configured to reduce inference latency by skipping layers, (206): Minimum Predictive Reliability Threshold (MPRT) operative to determine earliest reliable prediction stage and (207): Yield prediction module operative to output yield estimate and confidence. FIG.1		
No. of Pages : 13 No. of Claims : 3		

Faculties from the CSE (AI & ML) department published a patent titled “Method and System for Autonomous Multi-Modal Distress Detection and Secure Forensic Evidence Generation”. The patent was published on 20/03/2026 and focuses on advanced distress detection and secure forensic evidence generation in high-risk situations. The inventors are Sriramkumar R, M Lakshmanan, Jayavrinda V Vaddakeparambil, Joshuva Arockia Dhanraj, Godhandaraman T, Mithaguru, Sugandha Saxena, and Trupthi Rao.

(12) PATENT APPLICATION PUBLICATION	(21) Application No. 202641006307 A
(19) INDIA	
(22) Date of filing of Application : 22/01/2026	(43) Publication Date : 20/03/2026
(54) Title of the invention : Method and System for Autonomous Multi-Modal Distress Detection and Secure Forensic Evidence Generation	
(51) International classification	G06N 5:04, A61B 5:00, G08B 21:04, G08B 21:07, A61B 5:0205
(31) Priority Document No	NA
(32) Priority Date	NA
(33) Name of priority country	NA
(86) International Application No	NA
Filing Date	01/01/1900
(87) International Publication No	NA
(61) Patent of Addition to Application Number	NA
Filing Date	NA
(62) Divisional to Application Number	NA
Filing Date	NA
(71) Name of Applicant :	1)Dayananda Sagar University Address of Applicant :Devarakaggalhalli, Harohalli, Kanakapura Road,Bangaluru South District-562 112,Karnataka,India, Karnataka India
(72) Name of Inventor :	1)Sriramkumar R 2)M Lakshmanan 3)Jayavrinda V Vaddakeparambil 4)Joshuva Arockia Dhanraj 5)Godhandaraman T 6)Mithaguru 7)Sugandha Saxena 8)Trupthi Rao
(57) Abstract :	
Title: Method and System for Autonomous Multi-Modal Distress Detection and Secure Forensic Evidence Generation The present disclosure pertains to a compact, autonomous forensic evidence generation system implemented as a miniaturized wearable-compatible micro-device configured to operate in high-risk situations such as physical assault, coercion, abduction, chemical incapacitation, or sudden medical collapse. The system continuously monitors physiological, chemical, mechanical, acoustic, and visual parameters through a multi-modal sensor array and analyzes synchronized sensor data using an embedded inference engine to compute a real-time distress probability score. Upon detection of a distress condition exceeding a predefined or adaptive threshold, the device automatically triggers an event-based forensic capture sequence that selectively records contextually relevant evidence. Captured data is packaged with metadata and sealed within an on-device secure vault employing tamper detection and cryptographic protection, while authenticated and time-stamped metadata hashes are transmitted to a remote forensic server to establish a verified digital chain-of-custody. The technology enables reliable, privacy-preserving, and legally admissible evidence generation without requiring any user intervention.	
No. of Pages : 24 No. of Claims : 10	

Faculties from the CSE (AI & ML) department published a patent titled “Advanced Rail-Road Collision Prevention and Disaster-Aware Transport Safety Network”. The patent was published on 20/03/2026 and focuses on enhancing transport safety through intelligent collision prevention and disaster-aware systems. The inventors are Sriramkumar R, M Lakshmanan, Jayavrinda V Vadakkeparambil, Joshuva Arockia Dhanraj, Gowdham C, Pradeep Kumar K, A Vegi Fernando, Mithaguru, Godhandaraman T, and Srinidhi Kuna.

(12) PATENT APPLICATION PUBLICATION	(21) Application No. 202641008198 A
(19) INDIA	
(22) Date of filing of Application : 28/01/2026	(43) Publication Date : 20/03/2026
(54) Title of the invention : Advanced Rail-Road Collision Prevention and Disaster-Aware Transport Safety Network	
(51) International classification	G08G 1:16, B61L 29:28, B61L 27:00, G08G 1:01, G08G
(31) Priority Document No	10967
(32) Priority Date	NA
(33) Name of priority country	NA
(86) International Application No	NA
Filing Date	01/01/1900
(87) International Publication No	NA
(61) Patent of Addition to Application Number	NA
Filing Date	NA
(62) Divisional to Application Number	NA
Filing Date	NA
(71) Name of Applicant :	1)Dayananda Sagar University Address of Applicant :Devarakaggalhalli, Harohalli, Kanakapura Road,Bangaluru South District-562 112,Karnataka,India, Karnataka India
(72) Name of Inventor :	1)Sriramkumar R 2)M Lakshmanan 3)Jayavrinda V Vaddakeparambil 4)Joshuva Arockia Dhanraj 5)Gowdham C 6)Pradeep Kumar K 7)A Vegi Fernando 8)Mithaguru 9)Godhandaraman T 10)Srinidhi Kuna
(57) Abstract :	
Title: Advanced Rail-Road Collision Prevention and Disaster-Aware Transport Safety Network The present invention discloses an AI-integrated rail-road collision prevention and disaster-aware transport safety network for use at railway crossings, shared corridors, and high-risk mobility zones. The system employs multi-modal sensors to monitor dynamic objects and environmental conditions and uses artificial intelligence to perform real-time sensor fusion, hazard classification, trajectory prediction, and collision probability assessment. A distributed Edge-Fog-Cloud architecture enables low-latency local decision-making, regional coordination, and system-wide predictive intelligence. Safety-critical information is exchanged through rail-road vehicle-to-infrastructure communication, allowing early warnings and coordinated responses among trains, road vehicles, and infrastructure. Based on predicted risk levels, the system autonomously activates safety mechanisms such as barriers, visual and audible alerts, traffic control, and braking assistance. The invention supports fail-safe operation during network or power failures, thereby providing a predictive, autonomous, and resilient transport safety solution that significantly improves rail-road collision prevention and disaster response.	
No. of Pages : 26 No. of Claims : 8	

Faculties from the CSE (AI & ML) department published a patent titled “Multimodal Non-Contact Pediatric Health Screening and Early-Alert System”. The patent was published on 20/03/2026 and focuses on non-contact, large-scale health screening and early detection of medical conditions in children. The inventors are Sriramkumar R, M Lakshmanan, Jayavrinda V Vadakkeparambil, Joshua Arockia Dhanraj, Gowdham C, Mude Nagarjuna Naik, A Vegi Fernando, Vinutha N, and Abdul Haq Nalband.

(12) PATENT APPLICATION PUBLICATION	(21) Application No.202641008200 A
(19) INDIA	
(22) Date of filing of Application :28/01/2026	(43) Publication Date : 20/03/2026
(54) Title of the invention : Multimodal Non-Contact Pediatric Health Screening and Early-Alert System	
(51) International classification	:A61B 5/00, A61B 5/0205, A61B 5/08, A61B 7/04, A61B 5/01
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(36) International Application No	:
Filing Date	:01/01/1900
(57) International Publication No	:NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA
(71)Name of Applicant :	1)Dayananda Sagar University Address of Applicant :Devarakaggalahalli, Harohalli, Kanakapura Road,Bengaluru South District-562 112,Karnataka,India. Karnataka India
(72)Name of Inventor :	1)Sriramkumar R 2)M Lakshmanan 3)Jayavrinda V Vadakkeparambil 4)Joshuva Arockia Dhanraj 5)Gowdham C 6)Mude Nagarjuna Naik 7)A Vegi Fernando 8)Vinutha N 9)Abdul Haq Nalband
(57) Abstract :	
Title: Multimodal Non-Contact Pediatric Health Screening and Early-Alert System A portable, non-contact pediatric health screening and early-alert system is disclosed for large-scale, periodic classroom screening of school-aged children. The system integrates heterogeneous sensing modalities comprising non-contact vital-sign monitoring, thermal screening, acoustic respiratory and cardiac sound analysis, camera-based posture and ocular assessment, skin-surface observation, and disposable salivary biochemical testing within a single compact device. Multimodal data is processed using a hierarchical pediatric health prediction architecture employing confidence-weighted fusion and temporal baseline modeling to generate child-specific risk classifications and early alerts prior to visible symptom manifestation. Individualized baselines associated with encrypted student health identifiers are securely stored and continuously updated to enable trend-based deviation detection. On-device inference enables offline operation with minimal reliance on medical personnel, while optional secure synchronization supports reporting and analytics. The system provides rapid screening, intuitive color-coded alerts, and actionable recommendations suitable for school and community health programs.	
No. of Pages : 28 No. of Claims : 9	

The Department of CSE (AI & ML) is proud to share that, as part of the 49th Series of Student Project Proposals approved for sponsorship by the Karnataka State Council for Science and Technology (KSCST) for the academic year 2025-26, the department has secured three sponsored projects. The department congratulates the students and faculty mentors— Dr. Vinutha N, Associate Professor; Dr. Sugandha Saxena, Assistant Professor; and Prof. Pradeep Kumar K, Assistant Professor for their valuable guidance and contribution. This accomplishment reflects the department's continued commitment to fostering research excellence and encouraging student innovation.

KARNATAKA STATE COUNCIL FOR SCIENCE AND TECHNOLOGY
 Indian Institute of Science Campus, Bengaluru – 560 012
 Website: www.kscst.org.in Email: kscst@kscst.org.in Tel: 080-2314 1832-2314 88484943

49th Series of Student Project Programme (SPP): 2025-26
 List of Student Project Proposals Approved for Sponsorship

SI. DAYANANDA SAGAR UNIVERSITY, BENGALURU SOUTH

Sl. No.	PROPOSAL REFERENCE NO.	PROJECT TITLE	COURSE	BRANCH	NAME OF THE GUIDER	NAME OF THE STUDENT(S)	AMOUNT SANCTIONED (₹ IN L)
345	49S_MSC_0583	PECTIN-BASED COLLOID-TARGETED NANOPARTICLE-FORMULATION CO-DELIVERING VITAMIN D AND PROBIOTIC FOR PRECISION THERAPY OF INFLAMMATORY BOWEL DISEASE (IBD).	M.Sc	BIOCHEMISTRY AND BIOTECHNOLOGY	Prof. SAYACHANDRA K. Prof. SAMTOSH K. CHOUDHRI	Mr. HITHAISHEE COLWIN V B Mr. ABHISHEK C	7,000.00
346	49S_BE_0184	SMART LECTURE HALL BEAT DETECTION SYSTEM	B.E.	COMPUTER SCIENCE AND ENGINEERING	Prof. MECHA CHANDEL Prof. CHANDRAKALAL	Mr. SANJANA T Mr. M ABILASH Mr. THAZHA U GANIGA Mr. SANJANA S	3,000.00
347	49S_BE_0181	DUAL-LAYER PIEZOELECTRIC FLOOR TILE WITH IoT-BASED ENERGY GENERATOR AND MONITORING SYSTEM	B.E.	COMPUTER SCIENCE AND ENGINEERING	Dr. SREEDHAR S K.	Mr. RAJAVARMAN C B Mr. AMAN VIJESHTAQUE AMIR SAIED Mr. ANKHA M KAMAT Mr. SHRESTHA H	4,000.00
348	410S_BE_2364	REAL-TIME UNDERGROUND VIBRATION DETECTION FOR BORDER INFILTRATION PREVENTION LEVERAGING AI AND WIRELESS EDGE SENSOR NETWORKS	B.E.	COMPUTER SCIENCE AND ENGINEERING	Prof. SHILPA SUDHEENDRAN	Mr. SA PRASAD HANDEGUNDI Mr. SANKARDESH Mr. SHASHANK SHIVANAND TELL Mr. SHRINIVASAGOULD J PATEL	4,500.00

KSCST-49th Series of Student Project Programme (SPP) List of approved projects for sponsorship Page 06 of 305

KARNATAKA STATE COUNCIL FOR SCIENCE AND TECHNOLOGY
 Indian Institute of Science Campus, Bengaluru – 560 012
 Website: www.kscst.org.in Email: kscst@kscst.org.in Tel: 080-2314 1832-2314 88484943

49th Series of Student Project Programme (SPP): 2025-26
 List of Student Project Proposals Approved for Sponsorship

349	49S_BE_2891	SENORCONNECT: A VOICE-ENABLED MOBILE PLATFORM WITH REGIONAL LANGUAGE SUPPORT FOR ELDERLY WELL-BEING AND GOVERNMENT SCHEME ADVISORY ACROSS RISK	B.E.	COMPUTER SCIENCE AND ENGINEERING	Prof. MALA S A	Mr. RAGHAVENDRASOUD J PATIL Mr. MOHAMMED AMRUL AMAN Mr. PUNEETH S P Mr. RAJA MOHAMAD	4,000.00
350	49S_BE_3577	AI-POWERED LEARNING PLATFORM FOR QUALITY EDUCATION IN UNDERSERVED REGIONS FOR SCHOOL TEACHERS AND STUDENTS	B.E.	COMPUTER SCIENCE AND ENGINEERING	Dr. SAVITHA HIRIYATH	Mr. D N PADMADESHI Mr. SOOMRA B Mr. LOKA JAYAKUMAR Mr. REVANTH TIMMENDRAN	4,000.00
351	49S_BE_4039	PERSONALIZED HEALTHCARE TECHNOLOGY AI-BASED SMART BAND FOR ASTHMA PATIENT HEALTH MONITORING	B.E.	COMPUTER SCIENCE AND ENGINEERING (DATA SCIENCE)	Prof. KAVYASHREE I PASTAN	Mr. YOGESH S Mr. MOHITH R Mr. VIDYANATH REDDY Mr. V SAI HEMANTH REDDY	4,000.00
352	49S_BE_0538	AI AUDITOR: FALSHESS, ROBUSTNESS AND HALLUCINATION	B.E.	COMPUTER SCIENCE AND ENGINEERING (DATA SCIENCE)	Prof. MONISH Prof. MITHAUN	Mr. ANSH GUPTA Mr. VIMRAJ VARSHI Mr. KRITIK URSAN	3,500.00
353	40S_BE_3379	A HYBRID QUANTUM TRANSFORMER FRAMEWORK FOR SEVERITY GRADING AND ANALYSIS OF PETAL-HEART ANGIOPLASTIC IN ULTRASOUND IMAGES	B.E.	ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING	Dr. VINUTHA N	Mr. NIGHAT N SHARU Mr. KAZALA SHARANA Mr. LAKSHYALI REDDY Mr. TANVA GOPAL	3,500.00

KSCST-49th Series of Student Project Programme (SPP) List of approved projects for sponsorship Page 07 of 305

KARNATAKA STATE COUNCIL FOR SCIENCE AND TECHNOLOGY
 Indian Institute of Science Campus, Bengaluru – 560 012
 Website: www.kscst.org.in Email: kscst@kscst.org.in Tel: 080-2314 1832-2314 88484943

49th Series of Student Project Programme (SPP): 2025-26
 List of Student Project Proposals Approved for Sponsorship

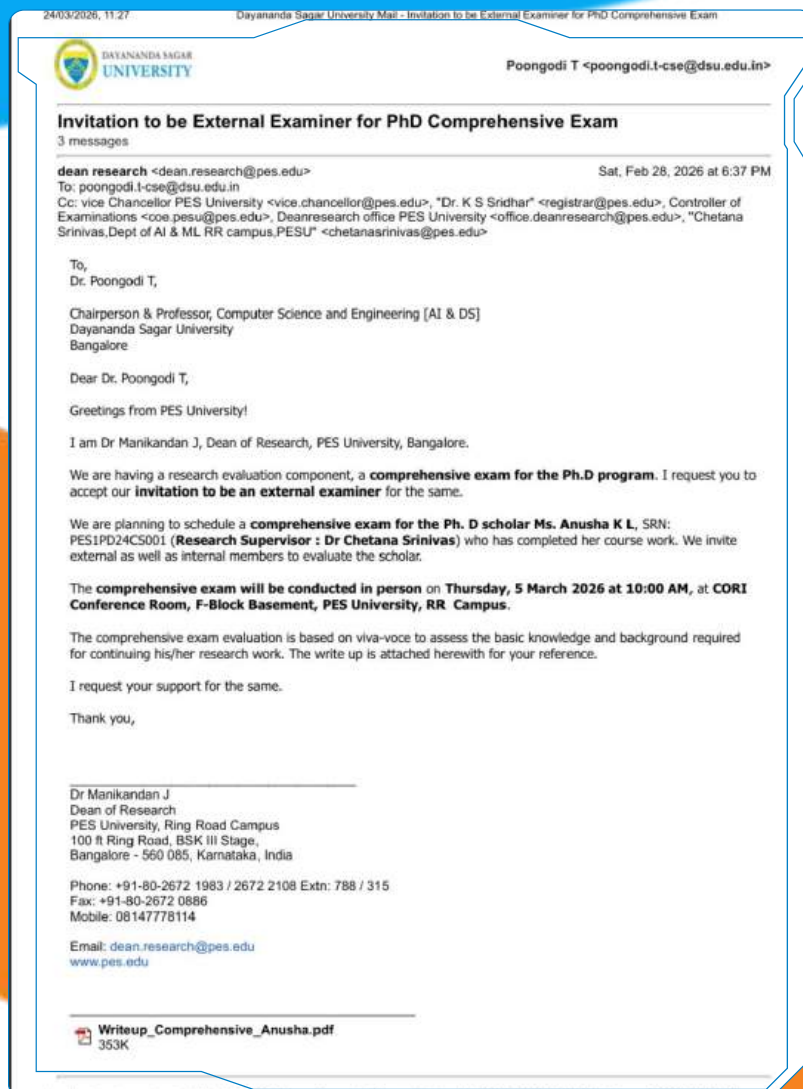
354	49S_BE_3993	INTELLIGENT ANNOTATION SYSTEM WITH EDGE-DEPLOYED DEEP LEARNING FOR HEART MURMUR CLASSIFICATION	B.E.	ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING	Dr. VINUTHA N Prof. PRADEEP KUMAR K.	Mr. DEEKSHITHA M Mr. UDAYAL KUMAR Mr. SHANTHI GOVINDA DEITY Mr. KARA SWATHI	4,000.00
355	49S_BE_3769	ENHANCING LEGAL ACCESSIBILITY FOR WOMEN CASE LAW RETRIEVAL	B.E.	ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING	Dr. SUGANDHA SAXENA Dr. S. V. K. R. RAJESHWARI	Mr. POOLJA S P Mr. ANANDH Mr. RATHASHTHA G D Mr. SAHANA PRIYAN	4,000.00



Dr. Poongodi T
Professor and Chairperson
Department of CSE (AI & DS)

Dr. Poongodi T, Chairperson & Professor, Department of CSE (AI & DS), Dayananda Sagar University, was invited by PES University to serve as an External Examiner for the Ph.D. Comprehensive Examination. The examination was conducted for the research scholar Ms. Anusha K L (SRN: PES1PD24CS001) under the supervision of Dr. Chetana Srinivas.

The comprehensive exam was held on 5th March 2026 at 10:00 AM at the CORI Conference Room, PES University, RR Campus, Bengaluru. The evaluation was conducted through a viva-voce to assess the scholar's foundational knowledge and readiness to continue research work.





Dr. Ramesh Wadawadagi,
Associate Professor,
Department of CSE (AI & DS)

Dr. Ramesh Wadawadagi co-authored a research paper titled “Context-Driven Question-Answering on Narrative Text Document Corpus,” published in SN Computer Science (Springer Nature), 2026.

The work focuses on advanced NLP techniques using ContextQA-BERT to improve answer extraction accuracy from narrative text datasets.

SN Computer Science (2026) 7:286
<https://doi.org/10.1007/s42979-026-04854-4>

ORIGINAL RESEARCH

Context-Driven Question-Answering on Narrative Text Document Corpus

Ramesh Wadawadagi¹ · Shrikant Tiwari² · Kanchan Naithani²

Received: 11 April 2025 / Accepted: 22 February 2026
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Abstract
The impeccable performance revealed by extractive QA systems in predicting answers to questions from a document corpus is highly appreciated. Nevertheless, the answers returned by extractive QA systems often lack relevance to the specific context of the questions asked. This discrepancy primarily arises from the fact that answers appear in different contexts across the collection of documents. To address this challenge, we propose a Context-driven QA (ContextQA) system that leverages the pre-trained BERT-based model RoBERTa at various stages. Further, the model is fine-tuned on custom narrative text datasets for the intended QA task. Specifically, the proposed model employs a three-stage data processing pipeline. During the first stage, the question phrase is transformed into a topic sentence through a process known as query-to-topic conversion. Consequently, the documents relevant to a specific topic are retrieved from the corpus for context-span extraction. In the second stage, for each relevant document, topic segmentation is applied to delineate the boundaries of potential context spans. This is achieved by computing relevance scores between the topic sentence and each context span from the retrieved document. Finally, the top k -ranked context spans are selected for the task of answer-span prediction. To accomplish these objectives, we use BERT-based language models and other NLP techniques across various levels and stages. The effectiveness of the proposed ContextQA-BERT is critically evaluated using a corpus of Indian epic stories, including the Ramayana and the Mahabharata. The experimental results indicate that the three-stage ContextQA-BERT system achieves high accuracy in extracting answer spans from the provided context paragraphs.

Keywords Question-answering systems · Query-to-topic conversion · Context-span prediction · Answer-span prediction · Topic segmentation · Answer re-ranking

Introduction
Question-Answering (QA) is a critical problem in NLP and continues to remain a premier problem in Artificial Intelligence. The primary goal of QA systems is to answer users' queries by selecting short text segments from the given document corpus [1–3]. These QA systems can be either extractive or generative, depending on the input question type and the output generated. The extractive models are responsible for selecting answer spans from the context paragraphs in the document corpus [4]. On the contrary, generative models can generate free text directly from paragraphs based on given context [5]. However, many contemporary and benchmark evaluations claim that generative QA models using Large Language Models (LLMs) on narrative text, such as stories, books, or long documents, perform much worse than on typical short factual passages [6, 7]. For instance, many leading contemporary LLM models, when trained on

Ramesh Wadawadagi, Shrikant Tiwari and Kanchan Naithani contributed equally to this work.

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² Department of Computer Science and Engineering, Galgotias University, Greater Noida, Uttar Pradesh 203201, India

Published online: 17 March 2026

SN Computer Science
A SPRINGER NATURE JOURNAL



Dr. Pavani Vittapalli
Assistant Professor,
Department of CSE (AI & DS)

Prof. Pavani Vittapalli, CSE (AI & DS), Dayananda Sagar University, participated in a Five-day National FDP on “Agentic AI: Design, Development & Real-World Applications.”

The program was conducted by RNS Institute of Technology, Bengaluru, in association with Spoken Tutorial, Edu Pyramids, and SINE, IIT Bombay, from March 9–13, 2026.





Prof. Nikita Banerjee
Assistant Professor,
Department of CSE (AI & DS)

Ms. Nikita Banerjee, CSE (AI & DS), Dayananda Sagar University, successfully completed a five-day FDP on “NLP Applications.”

The program was organized by Sree Rama Engineering College in association with Pantech Solutions from March 10 to 14, 2026, enhancing expertise in natural language processing.





Dr. Mubeen Ahmed Khan
Assistant Professor
Department of Cyber Security



Dr. Devi Priya V S
Assistant Professor
Department of Cyber Security

Dr. Mubeen Ahmed Khan and Dr. Devi Priya V S co-authored the research paper titled "Facial Recognition-Enhanced User Profiling for Personalized Recommendation Systems," published in an IEEE International Conference in 2025.

Conferences > 2025 IEEE International Confe...

Facial Recognition-Enhanced User Profiling for Personalized Recommendation Systems

Publisher: **IEEE**

[Cite This](#)

PDF

[Mubeen Ahmed Khan](#) ; [Tanvir Habib Sardar](#) ; [Devi Priya V S](#) ; [P Naresh](#) ; [Nivetha R](#) ; [Shreyas Rajendra Hole](#)

[All Authors](#)

1
Cites in
Paper

27
Full
Text Views



Abstract

Document
Sections

- I. Introduction
- II. Literature Survey
- III. Methodology
- IV. Evaluation Matrix
- V. Results and

Abstract:

A recommendation system with integrated user profiling is presented, leveraging facial recognition for seamless user identification. Existing profiles are accessed for personalized recommendations based on past preferences. New user profiles are created, and recommendations are tailored based on initial choices, adapting as interaction data accumulates. This approach bridges the gap between traditional recommendation systems and user identification, offering a personalized experience for diverse users. This version emphasizes the real-time aspect, which is often a key feature in such systems, and utilizes "engines" to convey a more technical, system-focused feel and Innovative. It also highlights "leveraging" to suggest an active application of technology for innovations. From the analysis, it is observed that MMOD GPU performs 453% better than Haar, 559% better than that DNN, 292% better than HoG and 6788% % better than MMOD(GPU).



Prof. Archita Bhattacharyya
Assistant Professor
Department of Cyber Security

Ms. Archita Bhattacharyya co-authored the research paper titled “A Holistic Survey of IoMT Security: Integrating Machine Learning, Federated Learning, and Explainable AI,” published in the IEEE OITS International Conference 2025.

Conferences > 2025 OITS International Confe...

A Holistic Survey of IoMT Security: Integrating Machine Learning, Federated Learning, and Explainable AI

Publisher: **IEEE**

[Cite This](#)

PDF

[Hazik Khurshid Zargar](#) ; [Archita Bhattacharyya](#) ; [Mrinal Kanti Deb Barma](#) ; [Rabindra K. Barik](#) All Authors



Abstract

Document Sections

- I. Introduction
- II. Related work
- III. IoMT
Architecture and Security Landscape
- IV. Framework Architecture
- V. Implementation Challenges and Limitations

Abstract:

The Internet of Medical Things (IoMT) represents a paradigm shift in healthcare delivery, enabling continuous remote monitoring and personalized patient care through interconnected medical devices. However, this interconnectivity introduces significant cybersecurity vulnerabilities that threaten patient safety and data privacy. This paper presents a comprehensive analysis of IoMT security challenges and proposes an integrated framework that combines Machine Learning (ML), Federated Learning (FL), and Explainable AI (XAI) for robust cybersecurity defense. Our systematic review examines current threats across device, network, and server layers, analyzes recent attack vectors targeting Cardiac Implantable Electronic Devices (CIEDs), and evaluates emerging security solutions. The proposed framework addresses critical vulnerabilities while maintaining regulatory compliance with FDA guidelines, GDPR, and HIPAA standards. Through the analysis of recent cybersecurity incidents that affect healthcare systems and the examination of protection mechanisms, this study contributes to the advancement of secure healthcare systems. The integrated approach demonstrates superior performance in threat detection while preserving patient privacy through federated learning architectures and ensuring transparency through explainable AI mechanisms.



Prof. Biswajit Debnath
Assistant Professor
Department of Cyber Security

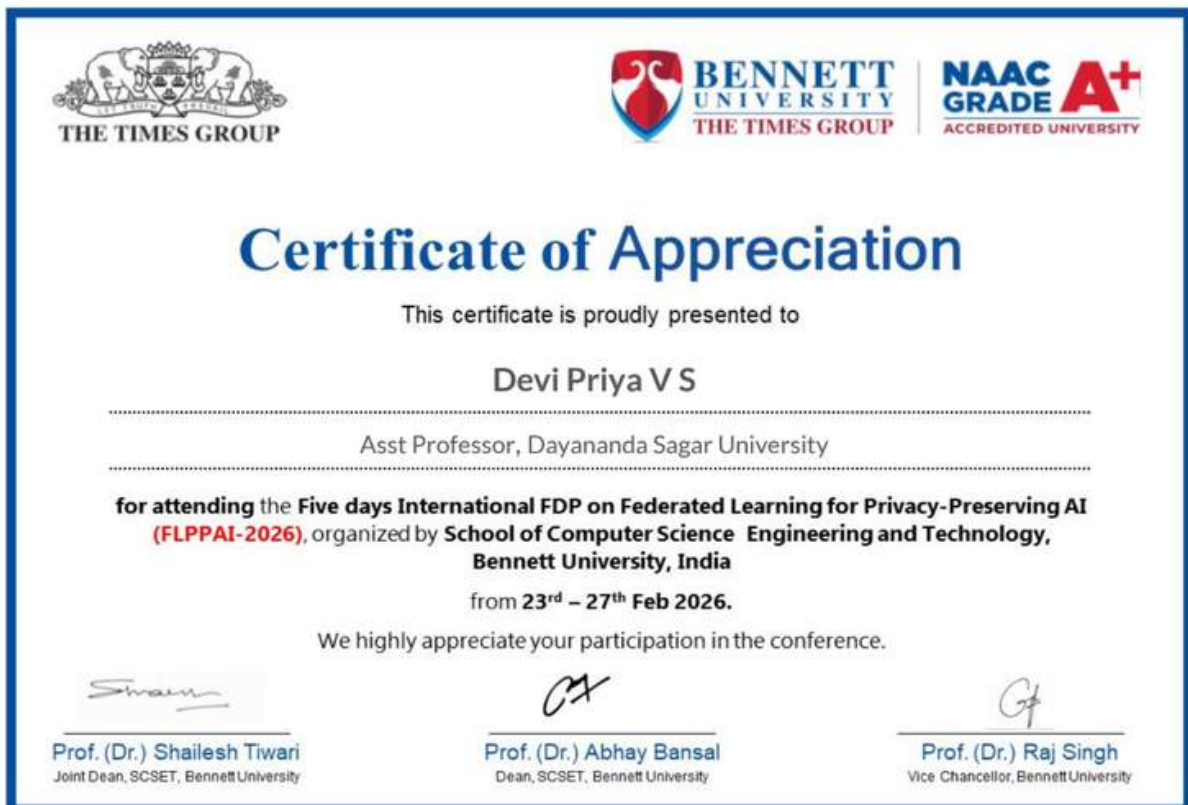
Mr. Biswajit Debnath, presented a research paper titled “Consent Before Care: A Blockchain-Enabled, Patient-Approved Access Control Model for Hospital IoMT Data” at the International Conference on Mathematical Sciences and Computational Intelligence (ICMSCI-2026), held from 20–22 February 2026, organized by the Department of Mathematics, P.G.D.A.V. College, University of Delhi, in association with the Faculty of Mathematical Sciences, University of Delhi, IIT Mandi, and NIT Uttarakhand.





Dr. Devi Priya V S
Assistant Professor
Department of Cyber Security

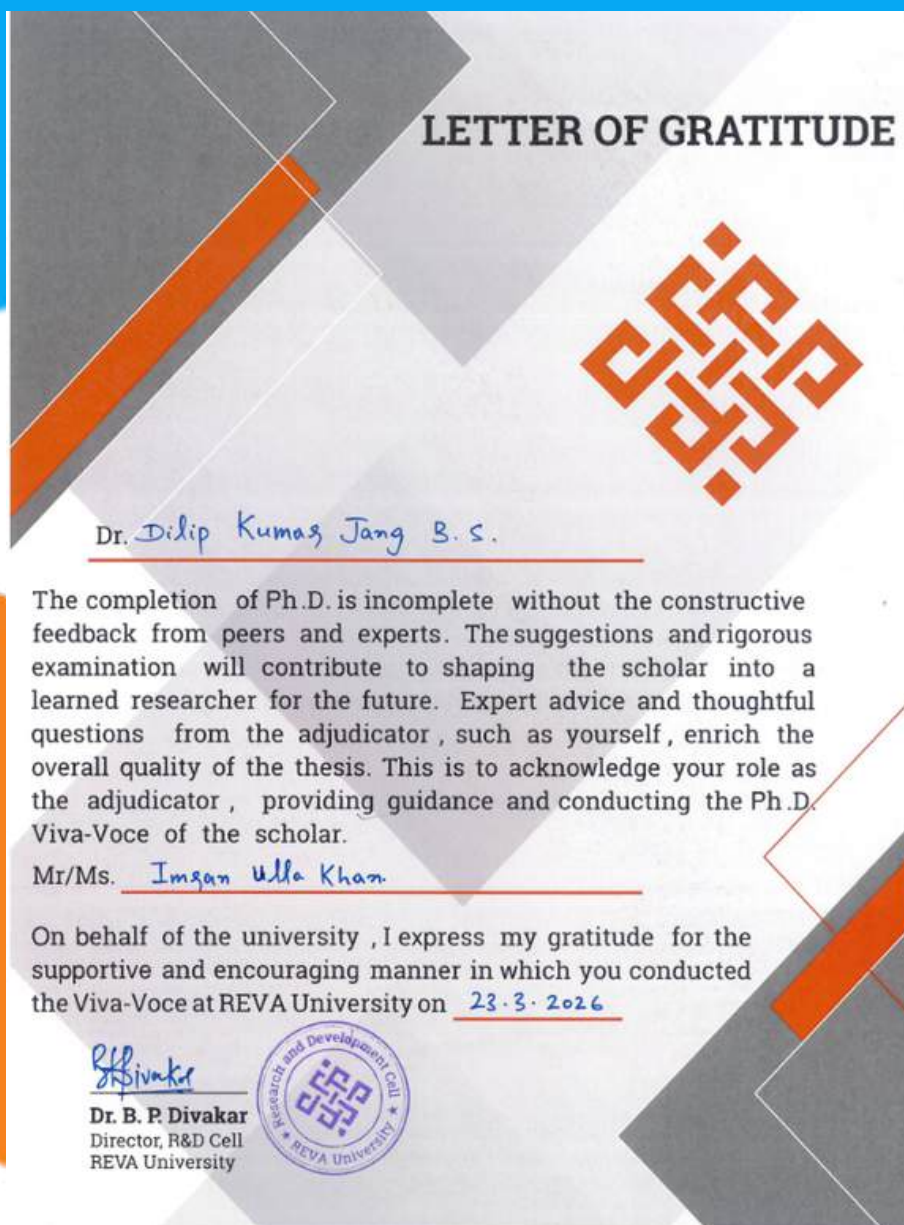
Dr. Devi Priya V S, received a Certificate of Appreciation from Bennett University (The Times Group) for successfully attending the Five-Day International Faculty Development Program on “Federated Learning for Privacy-Preserving AI (FLPPAI-2026)”, conducted from 23rd to 27th February 2026





Dr. Dilip Kumar Jang B. S.
Chairperson
Department of Cyber Security

Dr. Dilip Kumar Jang B. S. was honored with a Letter of Gratitude from REVA University in recognition of his valuable contribution as an Adjudicator and Viva-Voce Examiner for a Ph.D. scholar





Prof. Archita Bhattacharyya
Assistant Professor
Department of Cyber Security

Ms. Archita Bhattacharyya received a Certificate of Participation from Grad Guru Innovation (ISO-certified organization) for attending a Career Guidance Session Webinar held on 06 March 2026





Prof. Ranjima P
Assistant Professor
Department of Cyber Security

Ms. Ranjima P, has successfully completed the Faculty Development Program on “AI for Managers”, conducted by the E&ICT Academy, IIT Kanpur under the EICTA Consortium (a joint initiative of MeitY, IITs, NITs, and IIITs) from 16 February 2026 to 28 February 2026



इलेक्ट्रॉनिक्स एवं
सूचना प्रौद्योगिकी मंत्रालय
MINISTRY OF
ELECTRONICS AND
INFORMATION TECHNOLOGY



EICTA Consortium
A joint initiative of MeitY and IITs, NITs and IIITs

EICTA Consortium

(A Joint Initiative of MeitY and IITs, NITs and IIITs)

Certificate

This is to certify that
Dr. / Mr. / Ms. **Ranjima P** of
Dayananda Sagar University, Bangalore
has completed the **Faculty Development Program** on
AI For Managers
from 16-02-2026 to 28-02-2026



Date of Issue: 18-03-2026

Prof B. V. Phani

Chief Investigator, E&ICT Academy, IIT Kanpur

EICT Academies: IIT Kanpur, IIT Guwahati, IIT Roorkee, MNIT Jaipur, IIITDM Jabalpur, NIT Patna, NIT Warangal



Prof. Vinitha V
Assistant Professor
Department of Cyber Security

Ms. Vinitha V, successfully completed the 6-Day National Level Faculty Development Program (FDP) on “Generative & Agentic AI – Tools & Demo’s”, organized by the Department of CSE, Sardar Vallabhbhai National Institute of Technology (SVNIT), and technically co-sponsored by the IEEE Gujarat Section, in collaboration with Pantech Solutions (India) Pvt. Ltd., held from 16th to 21st February 2026





Prof. Sayed Faizan Qaser
Assistant Professor
Department of CST

1) Prof. Sayed Faizan Qaser, Assistant Professor, Department of Computer Science and Technology, School of Engineering, Dayananda Sagar University, Ramanagara, participated in a one-week online Faculty Development Programme on “Quantum Technologies: Concepts, Challenges & Opportunities” held from 4th to 10th March 2026. domain.



2) Prof. Sayed Faizan Qaser, Assistant Professor, Department of Computer Science and Technology, participated in a five-day online workshop on “Advances in Generative AI: Applications in Health Care and Climate Science” held from 23rd to 27th February 2026.





Dr.Santosh Kumar J
Associate Professor
Department of CST

1) Dr. Santosh Kumar J, along with the AI Team, has successfully published a patent titled “A Multi-Modal Multi-Agent Artificial Intelligence Powered Smart ERP System for Integrated University Ecosystem Management” (Patent No. 202641033095).

(12) PATENT APPLICATION PUBLICATION	(21) Application No. 202641033095 A
(39) INDIA	
(22) Date of filing of Application : 19/03/2026	(43) Publication Date : 27/03/2026
(34) Title of the invention : A Multi-Modal Multi-Agent Artificial Intelligence Powered Smart ERP System for Integrated University Ecosystem Management	
(51) International classification	G09Q 10/00 G06Q G06N G06N 5/04 G09Q G06N G06N 5/04
(71) Name of Applicant :	Davanand Sagar University Address of Applicant : Associate Professor Department of Computer Science and Technology Bengaluru South 567113 Bengaluru South Karnataka India
(72) Name of Inventor :	1)Dr. Prakash S 2)Supreeth S 3)Rishi Gowtham 4)Dr. Santosh Kumar J 5)Dr. Hanishah Shrinagar 6)Dr. Vishwanath R 7)Dr. Godfrey D
(31) Priority Document No	NA
(32) Priority Date	NA
(33) Name of priority country	NA
(36) International Application No	
Filing Date	01/01/2026
(87) International Publication No	NA
(81) Patent of Addition to Application Number	NA
Filing Date	NA
(82) Divisional to Application Number	NA
Filing Date	NA

(37) Abstract :
 The present invention discloses a Multi-Modal Multi-Agent Artificial Intelligence Powered Smart Enterprise Resource Planning (ERP) System designed to integrate, automate, and optimize the operations of a university ecosystem. Modern higher education institutions rely on multiple fragmented software systems for academic administration, finance, learning management, library services, hostel management, and transport resource operations. These disconnected systems create data silos, increase administrative workload, and limit the ability of institutions to derive actionable insights from operational data. The proposed system introduces a unified intelligent ERP platform that consolidates institutional data through a centralized data integration framework and applies a multi-agent artificial intelligence architecture to automate processes and generate predictive analytics. The platform incorporates operational AI agents responsible for student support, academic intelligence, institutional analytics, and administrative automation. These agents interact through an orchestration framework to perform tasks such as query resolution, attendance monitoring, grade processing, resource scheduling, and accreditation documentation generation. A key component of the invention is a behavior analytics engine that continuously monitors user interaction patterns including login frequency, learning engagement, and collaborative activities. Machine learning models analyze these behavioral indicators to generate predictive insights such as student engagement scores, dropout risk detection, and personalized learning recommendations. The system further integrates external development platforms such as code repositories to evaluate programming activity and derive career intelligence insights including skill gap analysis and career pathway recommendations. The proposed invention provides a scalable Software-as-a-Service (SaaS) platform capable of improving institutional efficiency, enhancing student experience through a unified digital interface, reducing administrative workload, and enabling data-driven decision making for university leadership.
 No. of Pages: 13 No. of Claims: 7

2) Dr. Santosh Kumar J and team have successfully published a patent titled “System and Method for Generating and Immersive Visualization of 3D Perfusion Maps for Ischemic Stroke Assessment Using Artificial Intelligence and Augmented/Virtual Reality” (Patent No. 202641025134).

(12) PATENT APPLICATION PUBLICATION	(21) Application No.202641025134 A
(39) INDIA	
(22) Date of filing of Application :07/02/2026	(43) Publication Date : 29/03/2026
(34) Title of the invention : System and Method for Artifact Suppression in Bandwidth-Constrained Wireless Image Transmission Using Lightweight Deep Learning and Generative Models	
(51) International classification	G06N 39A, G06N 39B, G06T S00, G06V 10/764 H04N H01P H01P NA NA NA NA NA NA NA NA NA NA
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(72) Name of Inventor :	1)Nareem Ahmed 2)Dr. Navee R 3)Dr. Arun Anandhanarasimhan 4)Dr. Santosh Kumar J 5)Dr. Speerthi B S
(31) Priority Document No	NA
(32) Priority Date	NA
(33) Name of priority country	NA
(36) International Application No	
Filing Date	01/01/2026
(87) International Publication No	NA
(81) Patent of Addition to Application Number	NA
Filing Date	NA
(82) Divisional to Application Number	NA
Filing Date	NA

(37) Abstract :
 Wireless image transmission systems often operate under strict bandwidth limitations and noisy channel conditions, requiring aggressive lossy compression during data transmission. These constraints introduce visual artifacts such as blocking, blurring, and ringing, which significantly degrade image quality and negatively impact downstream computer vision tasks like object recognition and classification. This work presents a deep learning-based framework for suppressing compression and transmission artifacts in bandwidth-constrained wireless imaging environments. The proposed approach integrates a lightweight Generative Adversarial Network (GAN) and a Denoising Convolutional Neural Network (DCNN) to enhance perceptual image quality at the receiver side. The GAN employs a compact encoder-decoder generator and a shallow discriminator trained using a composite loss function combining adversarial loss, perceptual loss derived from the VGG Network, and the perceptual similarity metric LPIPS (Learned Perceptual Image Patch Similarity). This perceptual training strategy polarizes visual realism by restoring fine textures and structural details lost during compression. In parallel, the DCNN model learns a residual mapping to remove compression artifacts and mild channel noise effectively. Extensive experiments conducted in a MATLAB-based simulation framework demonstrate that the proposed methods significantly improve image quality in terms of Structural Similarity Index Measure, Peak Signal-to-Noise Ratio, and Notched Image Quality Evaluator metrics. Furthermore, model optimization techniques including structured sparsity and BIC-based model selection, model size, and inference latency, enables efficient deployment on embedded devices. The proposed method



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3) Dr. Santosh Kumar J and team have successfully published a patent titled “System and Method for Energy-Aware Self-Organizing Mesh Networking in Internet of Things Devices” (Patent No. 202641020561).

(12) PATENT APPLICATION PUBLICATION	(21) Application No.202641020561 A
(19) INDIA	
(22) Date of filing of Application :22/02/2026	(43) Publication Date : 06/03/2026
(54) Title of the invention : System and Method for Energy-Aware Self-Organizing Mesh Networking in Internet of Things Devices"	
(51) International classification	(71)Name of Applicant :
:H04W 84:18, H04W 40:24, H04W 4:38, H04L 12:24, H04L 45:122	1)Dayananda Sagar University Address of Applicant :Department of Data Science Dayananda Sagar University Devarajagannahalli Bengaluru South District, Karnataka, India 562112 maha.bocse@dsu.edu.in Bengaluru South Karnataka India
(31) Priority Document No	(72)Name of Inventor :
(32) Priority Date	1)Dr.Rashmi Amardeep
(33) Name of priority country	2)Prof. Mala B A
(86) International Application No	3)Prof. Bharath M B
Filing Date	4)Dayananda Sagar Academy of Technology and Management
(87) International Publication No	5)Dr. Santosh Kumar J
(61) Patent of Addition to Application Number	1)Dr.Rashmi Amardeep
Filing Date	2)Prof. Mala B A
(62) Divisional to Application Number	3)Prof. Bharath M B
Filing Date	4)Dr. Santosh Kumar J
(57) Abstract :	
The current disclosure is associated with a system and approach of energy-sensitive self-organizing mesh networking in Internet of Things (IoT) gadgets. The suggested system will include a multiplicity of IoT nodes that are set up to function in a decentralized mesh network with every node having an energy monitoring unit, a communication unit, and a local decision making unit. The nodes determine the routing paths and network roles autonomously by dynamically evaluating their residual energy levels, load on communication and network conditions of the network. Depending on the availability of real time energy, the selected nodes take or give up routing, forwarding or coordination functions in a dynamical manner to achieve the maximization of the overall network lifetime and reliability. The technique also allows topological reconfiguring and self-healing under node failure or energy loss without using a centralized controller. The revealed solution minimizes imbalance in energy consumption, keeps network outage, and increases operational time, which is apt in big and resource-limited internet of things applications like smart agriculture, industrial observations, and remote sensing areas.	
No. of Pages : 18 No. of Claims : 10	

4) Dr. Santosh Kumar J and team have successfully published a patent titled “System and Method for Artifact Suppression in Bandwidth-Constrained Wireless Image Transmission Using Lightweight Deep Learning and Generative Models” (Patent No. 202641026923).

(12) PATENT APPLICATION PUBLICATION	(21) Application No.202641025134 A
(19) INDIA	
(22) Date of filing of Application :03/03/2026	(43) Publication Date : 13/03/2026
(54) Title of the invention : System and Method for Generating and Immersive Visualization of the 3D Perfusion Maps for Ischemic Stroke Assessment Using Artificial Intelligence and Augmented/Virtual Reality	
(51) International classification	(71)Name of Applicant :
:G06T 7:00, A61B 6:03, A61B 6:00, G06N 3:08, G06N 3:04	1)Dayananda Sagar University Address of Applicant :Dr. Revathi V Associate Professor, Department of Computer Science and Engineering Dayananda Sagar university, Bengaluru south India revathi_v@dsu.edu.in 8870017467 Bengaluru South Karnataka India
(31) Priority Document No	(72)Name of Inventor :
(32) Priority Date	1)Dr. Revathi V
(33) Name of priority country	2)Dr. RemikaDevi M N
(86) International Application No	3)Dr. Naresh Nikhil
Filing Date	4)Dr. Roopa H N
(87) International Publication No	5)Syed Fuzail Rubbani
(61) Patent of Addition to Application Number	6)Suhail yashir bhosge
Filing Date	7)Sunit Kumar chavhan
(62) Divisional to Application Number	8)TAVVA TEJASWINI REDDY
Filing Date	9)Dr. Santosh Kumar J
(57) Abstract :	
The invention discloses a computer-implemented system and a method for enhanced ischemic stroke assessment that predicts volumetric perfusion parameter maps—specifically cerebral blood flow (CBF), cerebral blood volume (CBV), and mean transit time (MTT)—directly from non-contrast structural biomedical images, such as non-contrast computed tomography (NCCT), diffusion-weighted imaging (DWI), and apparent diffusion coefficient (ADC) maps. A custom 3D U-Net deep learning architecture, featuring 3x3x3 convolutions, Instance Normalization, Leaky ReLU activations, skip connections, and strided down sampling, processes the input volumes to generate the high-fidelity, multi-channel perfusion predictions without requiring contrast-enhanced dynamic scanning. The predicted volumetric maps undergo post-processing, including thresholding for infarct core (e.g., CBF 30%, contralateral mean) and penumbra identification via CBF-ADC mismatch criteria, followed by mesh generation using marching cubes and smoothing for a renderable 3D scenery. These models are seamlessly integrated into an immersive augmented reality (AR) and	



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7) Dr. Santosh Kumar J and team have successfully published a patent titled “An Augmented Reality-Based Three-Dimensional Brain Visualization System for Automated Segmentation, Classification, and Interactive Rendering of Ischemic and Hemorrhagic Stroke Regions from Computed Tomography Images” (Patent No. 202641024991).

(12) PATENT APPLICATION PUBLICATION	(21) Application No.202641024991 A
(19) INDIA	
(22) Date of filing of Application :03/03/2026	(43) Publication Date : 13/03/2026
(54) Title of the invention : An Augmented Reality-Based Three-Dimensional Brain Visualization System for Automated Segmentation, Classification, and Interactive Rendering of Ischemic and Hemorrhagic Stroke Regions from Computed Tomography Images	
(51) International classification	:G06T 19/00, A61B 6/00, G06N 3/08, G06T 19/20, A61B 6/03
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No	:
Filing Date	:01/01/1900
(87) International Publication No	:NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA
(71) Name of Applicant :	1)Dayananda Sagar University
Address of Applicant :	Dr. RenukaDevi M N Assistant Professor, Department of Computer Science and Engineering Dayananda Sagar university, Bengaluru south India renuka Devi.m.cse@dsu.edu.in 9916554904 Bengaluru South Karnataka India
(72) Name of Inventor :	1)Dr. RenukaDevi M N 2)Dr. Revathi V 3)Dr. Nareesh Nikhil 4)Dr. Roopa H N 5)Asha S K 6)Spoorti C K 7)Sunitha T G 8)Vaishnavi N M 9)Dr. Santosh Kumar J
(57) Abstract :	The present invention discloses an augmented reality-based three-dimensional brain visualization system for automated segmentation, classification, and interactive display of ischemic and hemorrhagic stroke regions from computed tomography images. The system comprises image acquisition, preprocessing, deep learning-based segmentation using a U-Net architecture, stroke classification, volumetric reconstruction using surface extraction algorithms, color-coded mapping, and augmented reality rendering using ARCore or ARKit frameworks. Segmented stroke regions are reconstructed into three-dimensional models and displayed in augmented reality space with distinct color differentiation for ischemic and hemorrhagic regions. The system enables interactive manipulation.

8) Dr. Santosh Kumar J and team have successfully published a patent titled “Adaptive Distributed Structural Battery Architecture for Space-Optimized Electric Buses” (Patent Application No. 202641026799; Publication Date: 20/03/2026).

(12) PATENT APPLICATION PUBLICATION	(21) Application No.202641026799 A
(19) INDIA	
(22) Date of filing of Application :03/03/2026	(43) Publication Date : 20/03/2026
(54) Title of the invention : Adaptive Distributed Structural Battery Architecture for Space-Optimized Electric Buses	
(51) International classification	:B60M 10/02, B60L 1/04, B60L 1/06, B60L 1/08, B60L 1/09, B60L 1/10, B60L 1/12, B60L 1/14, B60L 1/16, B60L 1/18, B60L 1/20, B60L 1/22, B60L 1/24, B60L 1/26, B60L 1/28, B60L 1/30, B60L 1/32, B60L 1/34, B60L 1/36, B60L 1/38, B60L 1/40, B60L 1/42, B60L 1/44, B60L 1/46, B60L 1/48, B60L 1/50, B60L 1/52, B60L 1/54, B60L 1/56, B60L 1/58, B60L 1/60, B60L 1/62, B60L 1/64, B60L 1/66, B60L 1/68, B60L 1/70, B60L 1/72, B60L 1/74, B60L 1/76, B60L 1/78, B60L 1/80, B60L 1/82, B60L 1/84, B60L 1/86, B60L 1/88, B60L 1/90, B60L 1/92, B60L 1/94, B60L 1/96, B60L 1/98, B60L 2/00, B60L 2/02, B60L 2/04, B60L 2/06, B60L 2/08, B60L 2/10, B60L 2/12, B60L 2/14, B60L 2/16, B60L 2/18, B60L 2/20, B60L 2/22, B60L 2/24, B60L 2/26, B60L 2/28, B60L 2/30, B60L 2/32, B60L 2/34, B60L 2/36, B60L 2/38, B60L 2/40, B60L 2/42, B60L 2/44, B60L 2/46, B60L 2/48, B60L 2/50, B60L 2/52, B60L 2/54, B60L 2/56, B60L 2/58, B60L 2/60, B60L 2/62, B60L 2/64, B60L 2/66, B60L 2/68, B60L 2/70, B60L 2/72, B60L 2/74, B60L 2/76, B60L 2/78, B60L 2/80, B60L 2/82, B60L 2/84, B60L 2/86, B60L 2/88, B60L 2/90, B60L 2/92, B60L 2/94, B60L 2/96, B60L 2/98, B60L 3/00, B60L 3/02, B60L 3/04, B60L 3/06, B60L 3/08, B60L 3/10, B60L 3/12, B60L 3/14, B60L 3/16, B60L 3/18, B60L 3/20, B60L 3/22, B60L 3/24, B60L 3/26, B60L 3/28, B60L 3/30, B60L 3/32, B60L 3/34, B60L 3/36, B60L 3/38, B60L 3/40, B60L 3/42, B60L 3/44, B60L 3/46, B60L 3/48, B60L 3/50, B60L 3/52, B60L 3/54, B60L 3/56, B60L 3/58, B60L 3/60, B60L 3/62, B60L 3/64, B60L 3/66, B60L 3/68, B60L 3/70, B60L 3/72, B60L 3/74, B60L 3/76, B60L 3/78, B60L 3/80, B60L 3/82, B60L 3/84, B60L 3/86, B60L 3/88, B60L 3/90, B60L 3/92, B60L 3/94, B60L 3/96, B60L 3/98, B60L 4/00, B60L 4/02, B60L 4/04, B60L 4/06, B60L 4/08, B60L 4/10, B60L 4/12, B60L 4/14, B60L 4/16, B60L 4/18, B60L 4/20, B60L 4/22, B60L 4/24, B60L 4/26, B60L 4/28, B60L 4/30, B60L 4/32, B60L 4/34, B60L 4/36, B60L 4/38, B60L 4/40, B60L 4/42, B60L 4/44, B60L 4/46, B60L 4/48, B60L 4/50, B60L 4/52, B60L 4/54, B60L 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B60L 10/02, B60L 10/04, B60L 10/06, B60L 10/08, B60L 10/10, B60L 10/12, B60L 10/14, B60L 10/16, B60L 10/18, B60L 10/20, B60L 10/22, B60L 10/24, B60L 10/26, B60L 10/28, B60L 10/30, B60L 10/32, B60L 10/34, B60L 10/36, B60L 10/38, B60L 10/40, B60L 10/42, B60L 10/44, B60L 10/46, B60L 10/48, B60L 10/50, B60L 10/52, B60L 10/54, B60L 10/56, B60L 10/58, B60L 10/60, B60L 10/62, B60L 10/64, B60L 10/66, B60L 10/68, B60L 10/70, B60L 10/72, B60L 10/74, B60L 10/76, B60L 10/78, B60L 10/80, B60L 10/82, B60L 10/84, B60L 10/86, B60L 10/88, B60L 10/90, B60L 10/92, B60L 10/94, B60L 10/96, B60L 10/98, B60L 11/00, B60L 11/02, B60L 11/04, B60L 11/06, B60L 11/08, B60L 11/10, B60L 11/12, B60L 11/14, B60L 11/16, B60L 11/18, B60L 11/20, B60L 11/22, B60L 11/24, B60L 11/26, B60L 11/28, B60L 11/30, B60L 11/32, B60L 11/34, B60L 11/36, B60L 11/38, B60L 11/40, B60L 11/42, B60L 11/44, B60L 11/46, B60L 11/48, B60L 11/50, B60L 11/52, B60L 11/54, B60L 11/56, B60L 11/58, B60L 11/60, B60L 11/62, B60L 11/64, B60L 11/66, B60L 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21/64, B60L 21/66, B60L 21/68, B



Dr. Santosh Kumar J
Associate Professor
Department of CST

9) Dr. Santosh Kumar J and team have successfully published a patent titled “An Augmented Reality-Based Three-Dimensional Brain Visualization System for Automated Segmentation, Classification, and Interactive Rendering of Ischemic and Hemorrhagic Stroke Regions from Computed Tomography Images” (Patent No. 202641024991).

The innovation leverages augmented reality and artificial intelligence to enable advanced visualization and analysis of stroke-affected brain regions, supporting improved diagnosis and clinical decision-making.

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(12) PATENT APPLICATION PUBLICATION		(21) Application No.202641024991 A
(19) INDIA		
(22) Date of filing of Application :03/03/2026		(43) Publication Date : 13/03/2026
(54) Title of the invention : An Augmented Reality-Based Three-Dimensional Brain Visualization System for Automated Segmentation, Classification, and Interactive Rendering of Ischemic and Hemorrhagic Stroke Regions from Computed Tomography Images		
(51) International classification	:G06T 19/00, A61B 6/00, G06N 3/08, G06T 19/20, A61B 6/03	(71)Name of Applicant : 1)Dayananda Sagar University Address of Applicant :Dr. RenukaDevi M N Assistant Professor, Department of Computer Science and Engineering Dayananda Sagar university, Bengaluru south India renukadevi.m- cse@dsu.edu.in 9916554904 Bengaluru South Karnataka India
(31) Priority Document No	:NA	(72)Name of Inventor : 1)Dr. RenukaDevi M N
(32) Priority Date	:NA	2)Dr. Revathi V
(33) Name of priority country	:NA	3)Dr. Naresh Nikhil
(86) International Application No	:	4)Dr. Roopa H N
Filing Date	:01/01/1900	5)Asha S K
(87) International Publication No	: NA	6)Spoorti C K
(61) Patent of Addition to Application Number	:NA	7)Sunitha T G
Filing Date	:NA	8)Vaishnavi N M
(62) Divisional to Application Number	:NA	9)Dr. Santosh Kumar J
Filing Date	:NA	
(57) Abstract :		
The present invention discloses an augmented reality-based three-dimensional brain visualization system for automated segmentation, classification, and interactive display of ischemic and hemorrhagic stroke regions from computed tomography images. The system comprises image acquisition, preprocessing, deep learning-based segmentation using a U-Net architecture, stroke classification, volumetric reconstruction using surface extraction algorithms, color-coded mapping, and augmented reality rendering using ARCore or ARKit frameworks. Segmented stroke regions are reconstructed into three-dimensional models and displayed in augmented reality space with distinct color differentiation for ischemic and hemorrhagic regions. The system enables interactive manipulation, measurement, and annotation while generating automated diagnostic reports. The invention improves diagnostic accuracy, reduces interpretation time, enhances spatial understanding, and supports medical education and telemedicine applications.		



Dr. Hemachandra Reddy K
Assistant Professor
Department of CST

Dr. Hemachandra Reddy K has published a conference paper titled “Predictive Analytics for EV Failures and Grid Stability for Smart Cities using ML Algorithms” at the Innovations in Machine, Engineering, and Digital (IMED) Conference, held in January 2026 at Kota Kinabalu, Malaysia.

The research focuses on leveraging machine learning algorithms to predict electric vehicle failures and enhance grid stability, contributing to the development of efficient and resilient smart city infrastructures.

Jesselton UNIVERSITY COLLEGE Times Higher Education **Impact Rankings 2025**

IEEE **CERTIFICATE OF APPRECIATION** **IEEE SMC**
Systems, Man, and Cybernetics Society

This certificate is proudly presented to
Hemachandra Reddy K

in recognition and appreciation of the valuable contribution as author of the research paper titled
Predictive Analytics for EV Failures and Grid Stability for Smart Cities Using ML Algorithms

at the IEEE Innovations in Machine, Engineering and Digital (IMED) Conference 2026
held on March 6–7, 2026, organized at Jesselton University College, Malaysia and hosted by
World Research Union (WRUnion), Malaysia.

Yuk Chin
Dato Dr. Yuk Fong Chin
President, Jesselton University College, Malaysia

Conference ID: #68921
Kota Kinabalu, Malaysia

Vally
Prof. Dr. Valliappan Raju
Conference Chair, IMED-2026
Professor, GISMA University, Germany

WORLD RESEARCH UNION MALAYSIA

4 QUALITY EDUCATION **9** AFFORDABLE AND CLEAN ENERGY **17** PARTNERSHIPS FOR THE GOALS



Dr. Hemachandra Reddy K
Assistant Professor
Department of CST



Dr. Santosh Kumar J
Associate Professor
Department of CST

Dr. Hemachandra Reddy K, Dr. Santosh Kumar J, and team have successfully published a patent titled “Hardware-Enforced Dynamic Access Control and Behavioral-Restricted USB Storage System.”

The innovation focuses on enhancing data security by implementing hardware-level access control and behavior-based restrictions, ensuring safer and more reliable usage of USB storage devices.

(12) PATENT APPLICATION PUBLICATION	(21) Application No.202641022154 A
(19) INDIA	
(22) Date of filing of Application :25/02/2026	(43) Publication Date : 06/03/2026
(54) Title of the invention : HARDWARE-ENFORCED DYNAMIC ACCESS CONTROL AND BEHAVIORAL- RESTRICTED USB STORAGE SYSTEM	
(51) International classification	:G06F 21/79, G06F 12/14, G06F 21/78, G06F 21/60, G06F 21/85
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No	:
Filing Date	:01/01/1900
(87) International Publication No	:NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA
(71)Name of Applicant :	1)Dr. Santosh Kumar J Address of Applicant :Associate Professor Computer Science and Technology Department Dayananda Sagar University Harohalli Bengaluru south Karnataka Bengaluru South Karnataka India
	2)Dayananda Sagar University
	3)Dr. Hemachandra Reddy K
(72)Name of Inventor :	1)Samrudh
	2)Srajan
	3)Varun BS
	4)Rajath SD
	5)Dr. Santosh Kumar J
	6)Dr. Hemachandra Reddy K
(57) Abstract :	The present invention relates to a hardware-enforced secure USB storage device designed to control data access and usage behavior independent of a host operating system. The device comprises a USB interface, a secure microcontroller unit (MCU), encrypted non-volatile flash memory, an embedded hardware policy engine, an authentication module, a host system fingerprinting module, and a tamper detection circuit. Unlike conventional encrypted USB drives that expose unlocked storage to the host system after authentication, the disclosed device never exposes raw memory. All encryption and decryption operations occur exclusively within the secure MCU, and data is streamed conditionally based on predefined security policies enforced by the hardware policy engine. The device performs system verification and user authentication prior to granting access and continuously monitors for tampering, unauthorized copying, debugging attempts, or policy violations. Upon detection of a violation, the device automatically executes
No. of Pages : 17 No. of Claims : 10	



Dr. Shahina M Parveen
Professor & Chairperson
Department of CST



Dr. Santosh Kumar J
Associate Professor
Department of CST



Dr. Sudha D
Associate Professor
Department of CST



Dr. Ramandeep Kaur
Assistant Professor
Department of CST



Dr. Hemachandra Reddy K
Assistant Professor
Department of CST

Dr. Hemachandra Reddy K, Dr. Shahina M Parveen, Dr. Sudha D, Dr. Ramandeep Kaur, Dr. Santosh Kumar J, and team have successfully published a patent titled “An IoT-Enabled Autonomous Medicine Dispensing Kiosk with RFID Smart Health Card and AI-Assisted Telemedicine for Underserved.”

The innovation focuses on improving healthcare accessibility by integrating IoT, RFID technology, and AI-assisted telemedicine, enabling efficient and contactless medicine dispensing for underserved communities.

(12) PATENT APPLICATION PUBLICATION	(24) Application No 202041028045 A
(19) INDIA	
(22) Date of filing of Application :10/03/2026	(43) Publication Date : 20/03/2026
(54) Title of the invention : An IoT-Enabled Autonomous Medicine Dispensing Kiosk with RFID Smart Health Card and AI-Assisted Telemedicine for Underserved Communities	
(51) International classification	G16H 2013, G16H 40/67, A61J 7/04, G06G 50/22, G07F 13/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(80) International Application No	:
(81) Filing Date	:01/03/1900
(82) International Publication No	:NA
(83) Patent of Addition to Application Number	:NA
(84) Filing Date	:NA
(85) Divisinal to Application Number	:NA
(86) Filing Date	:NA
(57) Abstract :	(71)Name of Applicant : 1)Doyananda Sagar University Address of Applicant :Associate Professor, Department of Computer Science and Technology, Doyananda Sagar University Bengaluru South 562112 Bengaluru
The present invention discloses Swasthya 24/7 – a solar-powered, IoT-enabled, autonomous medicine dispensing kiosk integrated with a Hospital Connected Cloud Prescription Database, a Cloud Integrated RFID Smart Health Card system, and an AI-assisted Proximity-Triggered Ambient Voice Guidance system. The invention is conceived to permanently resolve the critical last-mile healthcare access deficit experienced by rural, tribal, semi-urban, and underserved communities across India and other developing nations, where pharmacies, qualified pharmacists, and healthcare facilities are either absent, geographically inaccessible, or unavailable outside business hours. The Swasthya 24/7 operates continuously – 24 hours a day, 365 days a year – without requiring a full-time pharmacist or continuous internet connectivity. When a patient visits any partner hospital or PHC, the attending doctor uploads their prescription directly into the Swasthya 24/7 Cloud Health Database. Each registered patient is then issued an RFID Smart Health Card that, upon authentication at any kiosk nationwide, instantly retrieves their live encrypted medical profile – including all hospital-uploaded prescriptions, chronic illness records, dosage histories, allergy data, and refill eligibility – without the patient carrying any paper document. A core accessibility innovation is the Proximity-Triggered Ambient AI Voice Guidance System, which a person enters within 2-5 meters of the kiosk, the AI automatically begins narrating step-by-step instructions in the local regional language – guiding even a complexly illiterate, first-time user through the entire medicine collection process without any touch input required to begin, analogous to metro rail public announcement systems that continuously guide passengers before they reach their destination. The kiosk then permits dispensing of only prescription-approved medicines, generates real-time drug interaction alerts via voice and visual interfaces, and maintains a tamper-evident dispensing audit log. The system is powered by a 300W solar panel array with 150Ah battery backup, ensuring uninterrupted operation during power outages. A mechanical carousel-based automated dispensing mechanism, synchronized by servo motors interfaced with a Raspberry Pi 4 microcontroller, egresses medicine precisely with precision. Payments are supported via cash, UPI, debit/credit card, and Aadhaar Pay – ensuring access for all users regardless of digital literacy or banking status. An enterprise-grade module enables authorized PHC doctors to remotely manage access to critical	
	(72)Name of Invention : 1)Pragathi A B 2)Vaisholha H R 3)Shreyas R 4)Tejashwini 5)Kushal N J 6)Dr. Santosh Kumar J 7)Dr. Shahina Parveen M 8)Dr. Hemachandra Reddy 9)Dr. Sudha D 10)Dr. Ramandeep Kaur






Prof. Vinayaka V M
Assistant Professor
Department of CST

Prof. Vinayaka V M, Assistant Professor, Department of Computer Science and Technology, presented a paper titled “Restructuring Bharat into a Union of Seven Mahajanapadas” at the International Academic Conference on Ekatma Manav Darshan: Bharat’s World View, held in Mysuru from 25th to 27th March 2026.

The presentation explored conceptual frameworks and perspectives related to Bharat’s philosophical and socio-political structure, contributing to interdisciplinary academic discourse.

International Academic Conference




EKATMA MANAV DARSHAN

Bharat's Worldview


Commemorating 60 Years of Pandit Deendayal Upadhyaya's
historic lectures on Ekatma Manav Darshan

Certificate of Presentation & Participation


This is to certify that Dr./Mr./Ms. Vinayaka . V. M has participated / presented a research paper titled “ Restructuring Bharath in to Union of Seven Mahajanapadas ” at the International Academic Conference on “**Ekatma Manav Darshan – Bharat’s Worldview**” held from 25–27 March 2026 at Karnataka State Open University (KSOU), Mysuru, Karnataka, Bharat. The conference brought together scholars, researchers, and thought leaders to deliberate on Bharatiya civilizational knowledge, holistic development, and contemporary global challenges. We appreciate the participant’s valuable academic engagement and contribution to the conference.



Prof. Sharanappa V. Halse
Vice Chancellor, KSOU, Mysuru



Sri J. Nandakumar
National Convener, Prajna Pravah



Dr. Binay Singh Kumar
Director, SPMRF, Delhi



Dr. Hemachandra Reddy K
Assistant Professor
Department of CST

- 1) Dr. Hemachandra Reddy K, Faculty, Department of Computer Science and Technology, served as a Resource Person for a workshop titled “Quantum Computing Basics and Hands-on Session on Qiskit.”
- 2) Dr. Hemachandra Reddy K has been recognized as a reviewer at the Two-Day International Conference on Quantum AI and Deep-Tech Innovations for Next-Generation Intelligence (QUADNEXT-2026).





Dr. Danthuluri Sudha
Associate Professor
Department of CST

Dr. Danthuluri Sudha has successfully completed a Faculty Development Programme on “Data Science (ML & AI)” conducted from 23rd February to 8th March 2026.

The programme enhanced knowledge and skills in machine learning and artificial intelligence, contributing to academic and research excellence in data-driven technologies.



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सूचना प्रौद्योगिकी मंत्रालय
MINISTRY OF
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भारतीय प्रौद्योगिकी संस्थान
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EICTA Consortium
A Joint initiative of MeitY and IITs, NITs and IIITs

EICTA Consortium
(A Joint Initiative of MeitY and IITs, NITs and IIITs)

Certificate

This is to certify that

Dr. / Mr. / Ms. **Danthuluri Sudha** of
Dayananda Sagar University, Harohali, Bengaluru
has completed the **Faculty Development Program** on
Data Science (ML & AI)
from 23-02-2026 to 08-03-2026



Date of Issue: 30-03-2026



Prof B. V. Phani
Chief Investigator, E&ICT Academy, IIT Kanpur

EICT Academies: IIT Kanpur, IIT Guwahati, IIT Roorkee, MNIT Jaipur, IIITDM Jabalpur, NIT Patna, NIT Warangal

School of Engineering

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Dr. Shahina M Parveen
Professor & Chairperson
Department of CST

Dr. Shahina M. Parveen, Chairperson, Department of Computer Science and Technology, attended the Indiaspora Summit.

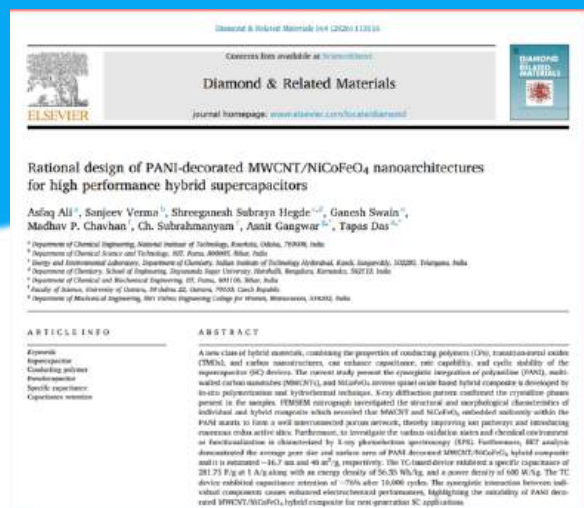
The summit brought together global leaders, innovators, and changemakers to discuss key issues, collaborations, and opportunities shaping the future across diverse sectors.



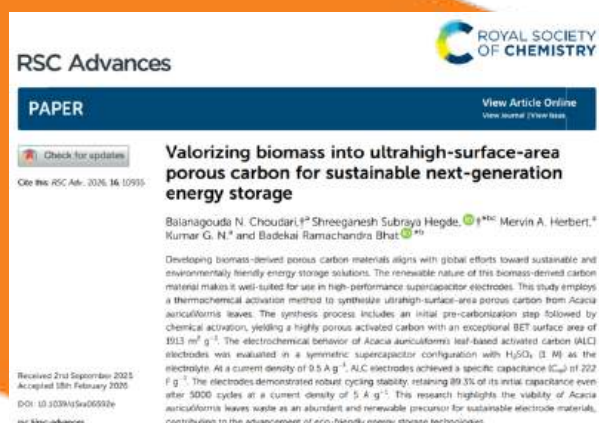


Dr. Shreeganesh Subraya Hegde
Assistant Professor
Department of Chemistry

1) Dr. Shreeganesh Subraya Hegde, Assistant Professor in the Department of Chemistry, has published a new research article titled “Rational design of PANI-decorated MWCNT/NiCoFeO₄ nanoarchitectures for high-performance hybrid supercapacitors.” The work appears in the prestigious Q1 journal *Diamond & Related Materials*, published by the Elsevier, which has an Impact Factor of 5.1 and a CiteScore of 7.0.



2) Dr. Shreeganesh Subraya Hegde, Assistant Professor in the Department of Chemistry, has published a recent research paper entitled “Valorizing biomass into ultrahigh-surface-area porous carbon for sustainable next-generation energy storage.”





Dr. Shreeganesh Subraya Hegde
Assistant Professor
Department of Chemistry

3) Dr. Shreeganesh Subraya Hegde, Assistant Professor in the Department of Chemistry, has published a recent research paper entitled “Thermochemically activated *Ficus benghalensis* leaf-derived porous activated carbon for sustainable supercapacitor electrodes.”

RSC Advances



PAPER

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Cite this: *RSC Adv.*, 2026, 16, 11864

Thermochemically activated *Ficus benghalensis* leaf-derived porous activated carbon for sustainable supercapacitor electrodes

Balanagouda N. Choudari, ^{†a} Shreeganesh Subraya Hegde, ^{†*bc}
Mervin A. Herbert, ^a Kumar G. N. ^a and Badekai Ramachandra Bhat ^{*b}

The adoption of renewable energy for mitigating climate change has intensified the demand for energy storage solutions. Embracing the circular economy, the valorisation of agricultural or forest biomass into electrode materials for energy storage systems provides a sustainable and environmentally friendly pathway. Herein, we synthesised an electrode material from dead *Ficus benghalensis* (Banyan tree) leaves by a thermochemical activation process at 700 °C. Systematic structural and morphological characterisation of the resulting *Ficus benghalensis* leaf-derived activated carbon (BLC_KOH) exhibited a hierarchical porous structure with a specific surface area of 495.56 m² g⁻¹. Electrochemical measurements of the BLC_KOH electrode performed in Na₂SO₄ (1 M) electrolyte in a two-electrode symmetric configuration demonstrated a specific capacitance of 561.22 F g⁻¹ at a current density of 0.2 A g⁻¹. Surface-controlled charge storage was found to be the dominant mechanism at a scan rate of 100 mV s⁻¹ based on Dunn analysis. Exceptional cycling stability with ~99.99% capacity retention was shown even after 1000 cycles, demonstrating its strong potential as a next-generation energy-storage electrode material. This study demonstrates that *Ficus benghalensis* leaves can serve as an abundant and renewable precursor for electrode materials, offering a pathway for sustainable and eco-friendly energy storage solutions.

Received 12th December 2025
Accepted 12th February 2026

DOI: 10.1039/d5ra09628f

rsc.li/rsc-advances



Dr. Pradeep Kumar Badiys
Assistant Professor
Department of Chemistry

1) Dr. Pradeep Kumar Badiya, Assistant Professor, Department of Chemistry, School of Engineering, DSU, and his Ph.D. students Mr. Kishan B S and Mr. Nagarjun S have published an Indian patent titled “A Novel Coumarin-Oxadiazole Azo Dye for Enhanced Latent Fingerprint Detection” in the Patent Office Journal (Issue No. 12/2026 dated 20/03/2026).



The Patent Office Journal No. 12(2026) dated 20/03/2026 20407

2) Dr. Pradeep Kumar Badiya, Assistant Professor, Department of Chemistry, School of Engineering, DSU, and his Ph.D. student Mr. Kishan B S have published an article titled “Novel Coumarin-Oxadiazole azo dye for enhanced latent fingerprint detection” in Journal of Chemical Sciences (Springer Nature) Research article (Q3, with an impact factor: 2). Journal of Chemical Sciences is a distinguished journal publishes in the areas of Chemical sciences.





Dr. BM Ashwin Desai
Associate Professor
Department of Electronics and
Communication Engineering

AICTE RPS (Lab to Market) Project Sanction for Innovative Nanofiber-Based Wound Management Solution

A research proposal from Dayananda Sagar University has been approved under the AICTE RPS – Lab to Market Scheme.

The project titled “Development of Portable Electrospinning Device & Biocompatible Formulations for In-situ Application of Nanofibers for Wound Management” has been sanctioned with a budget of ₹19,00,000 (Application ID: RPS-1-7324150851-2025-6854).

It is led by Dr. BM Ashwin Desai (Principal Investigator, ECE – School of Engineering) and Dr. Pronama Biswas (Co-Principal Investigator, Genetics – SBAS), and is expected to achieve TRL 6/7, bridging research and real-world healthcare applications.

This achievement reflects the institution’s strong focus on interdisciplinary research and innovation.

AICTE RPS (Lab to Market) Project Sanction – Intimation & Congratulations

External

Inbox x



Chairman ECE via googlegroups.com

Mar 26, 2026, 8:08PM (5 days ago)



to B, Prakash, Registrar, Udaya, Dean, Supriya, Director-IQAC, chairpersons-soe, dsuecefaculty, Ashwin, Pronama

Respected Sir,

Greetings of the day.

I am pleased to inform you that a research proposal from our institution has been **approved under the All India Council for Technical Education (AICTE) RPS – Lab to Market Scheme**.

Project Title:

Development of Portable Electrospinning Device & Biocompatible Formulations for In-situ Application of Nanofibers for Wound Management

Application ID: RPS-1-7324150851-2025-6854

Sanctioned Budget: ₹19,00,000

Principal Investigator (PI):

Dr. BM Ashwin Desai (ECE – School of Engineering)

Co-Principal Investigator (Co-PI):

Dr. Pronama Biswas (Genetics – SBAS)

The project has been recognized for its strong translational potential and is expected to achieve **Technology Readiness Level (TRL) 6/7**, contributing significantly toward bridging the gap between laboratory research and market-ready solutions, particularly in the healthcare domain.



Dr. Supraja Eduru
Assistant Professor
Department of Electronics and
Communication Engineering

Dr. Supraja Eduru has successfully completed a prestigious Post Doctoral Fellowship at the Federal University of Santa Maria, Brazil, South America. The fellowship was carried out over a one-year period from 03 April 2025 to 30 March 2026, marking a significant milestone in her academic and research career.

This achievement reflects Dr. Eduru's dedication to advanced research, innovation, and global academic collaboration. The fellowship has been recognized and validated by the Raise Global Innovation Forum (RGIF), United Kingdom, further emphasizing its international significance.





Dr. Navya R
Assistant Professor
Department of Electronics and
Communication Engineering

Dr. Navya R, Department of ECE, Dayananda Sagar University, has secured the publication of an Indian patent titled “ System and Method for Artifact Suppression in Bandwidth-Constrained Wireless Image Transmission using Lightweight Deep Learning and Generative Models.”

The invention enhances deep learning-based framework for suppressing compression and transmission artifacts in bandwidth-constrained wireless image transmission using lightweight generative adversarial network (GAN) to achieve notable improvements in perceptual quality metrics demonstrating her continued contribution to research and innovation in deep learning applications.

995 of 1666 Dayananda 10/88

(12) PATENT APPLICATION PUBLICATION (21) Application No.202641026923 A
 (19) INDIA
 (22) Date of filing of Application :07/03/2026 (43) Publication Date : 20/03/2026

(54) Title of the invention : System and Method for Artifact Suppression in Bandwidth-Constrained Wireless Image Transmission Using Lightweight Deep Learning and Generative Models

(51) International classification	:G06N 3/04, G06N 3/08, G06T 5/00, G06V 10/764, H04N 19/176	(71)Name of Applicant : 1)Dayananda Sagar University Address of Applicant :Naeem Ahmed Research Scholar University: Dayananda Sagar University Gender: Male Email : naeemahmed.res-soe-ece@dsu.edu.in Phone : +91 7406912212 Bengaluru South Karnataka India
(31) Priority Document No	:NA	(72)Name of Inventor : 1)Naeem Ahmed 2)Dr. Navya R 3)Dr. Arun Ananthanarayanan 4)Dr. Santosh Kumar J 5)Dr. Spoorthi B S
(32) Priority Date	:NA	
(33) Name of priority country	:NA	
(86) International Application No	:	
Filing Date	:01/01/1900	
(87) International Publication No	: NA	
(61) Patent of Addition to Application Number	:NA	
Filing Date	:NA	
(62) Divisional to Application Number	:NA	
Filing Date	:NA	

(57) Abstract :
 Wireless image transmission systems often operate under strict bandwidth limitations and noisy channel conditions, requiring aggressive lossy compression during data transmission. These constraints introduce visual artifacts such as blocking, blurring, and ringing, which significantly degrade image quality and negatively impact downstream computer vision tasks like object recognition and classification. This work presents a deep learning-based framework for suppressing compression and transmission artifacts in bandwidth-constrained wireless imaging environments. The proposed approach integrates a lightweight Generative Adversarial Network (GAN) and a Denoising Convolutional Neural Network (DnCNN) to enhance perceptual image quality at the receiver side. The GAN employs a compact encoder-decoder generator and a shallow discriminator trained using a composite loss function combining adversarial loss, perceptual loss derived from the VGG Network, and the perceptual similarity metric LPIPS (Learned Perceptual Image Patch Similarity). This perceptual training strategy prioritizes visual realism by restoring fine textures and structural details lost during compression. In parallel, the DnCNN model learns a residual mapping to remove compression artifacts and mild channel noise effectively. Extensive experiments conducted in a MATLAB-based simulation framework demonstrate that the proposed methods significantly improve image quality in terms of Structural Similarity Index Measure, Peak Signal-to-Noise Ratio, and Natural Image Quality Evaluator metrics. Furthermore, model optimization techniques including structured pruning and INT8 quantization reduce model size and inference latency, enabling efficient deployment on embedded devices. The restored images also improve the accuracy of downstream vision systems, demonstrating the effectiveness of the proposed framework for practical wireless imaging applications.

No. of Pages : 18 No. of Claims : 8



Dr. Navya R
Assistant Professor
Department of Electronics and
Communication Engineering

1)Dr. Navya R, Department of ECE, Dayananda Sagar University, Published an IEEE conference paper titled " Pharmaceutical Quality Assurance via Transformer-Based Deep Learning Models forAutomated Tablet Defect Detection" at 2nd International Conference on Artificial Intelligence and Knowledge Discovery in Concurrent Engineering (ICECONF-2025).

2)Dr. Navya R, has been awarded a Reviewer Certificate by Springer Nature in recognition of reviewing two manuscripts in 2026 for the Journal of Nanoparticle Research, highlighting her contribution to maintaining high standards in research publications.

Pharmaceutical Quality Assurance via Transformer-Based Deep Learning Models forAutomated Tablet Defect Detection

Shivanna D¹, Shaila S G², George Fernandez F³, Navya R⁴, Santhosh Kumar G⁵, Latha Anni⁶

¹Dept of CSE (Data Science) Dayananda Sagar University Bangalore, India
²Dept of CSE, Dayananda Sagar University, Bangalore, India
³Dept of ECE Dayananda Sagar University Bangalore, India
⁴Dept of ECE Dayananda Sagar College of Engineering,Bangalore, India

Email of: shivanna.d@dsu.edu.in, shaila.cs@dsu.edu.in, george.fernandez@gmail.com, navya.ec@dsu.edu.in, santhoshgk@dsu.edu.in, sprieth@dsu.edu.in, lathaa@dsu.edu

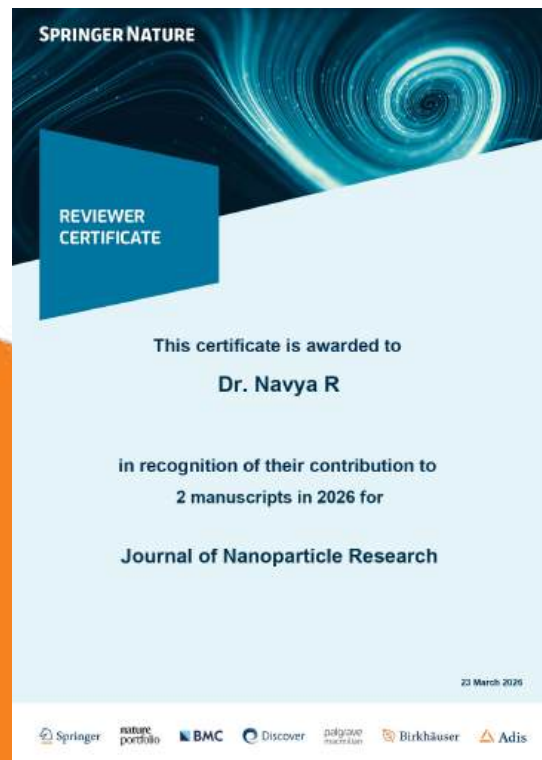
Abstract Pharmaceutical tablet quality is a key factor in patient safety and regulatory requirements. Conventional visual inspection techniques are subjective, time-consuming, and error prone. The research suggests a Vision Transformer (ViT)-based deep learning model to automate tablet defect detection with an objective of detecting surface-level defects like cracks, discoloration, scratches, and contamination. The new approach utilizes the self-attention mechanism of ViT to acquire fine-grained spatial information and context-aware representations, allowing accurate defect classification. The model is trained on a labeled set of high-resolution tablet images and attains an impressive accuracy of 98%, surpassing traditional convolutional neural networks (CNNs) in classification performance and generalization. Evaluation metrics such as ROC curves, precision-recall analysis, and F1-score highlight the model's robustness. This method provides an expandable, non-invasive, and real-time solution that is appropriate for implementation in contemporary pharmaceutical production lines. The research cites the promise of transformer-based structures in improving quality control systems in Industry 4.0 platforms.

Keywords—Tablet Defect Detection, Vision Transformer (ViT), Deep Learning, Quality Control, Pharmaceutical Aspects

I. INTRODUCTION

The pharmaceutical sector lays great importance on high-quality control for the purpose of patient protection and therapeutic efficacy. Among the paramount processes of quality assurance, tablet defect detection is pivotal for the identification of flaws in the form of cracks, chips, discoloration, and embossing mistakes that occur during the manufacturing process. The defects can have a

negative impact on drug stability, dosage consistency, and brand image, which makes their detection a priority task. Historically, tablet inspection has been performed manually by skilled workers. Manual processes are slow, subjective, and susceptible to human mistakes, particularly in the case of large-volume production lots. Consequently, an urgent need arises for robotic and intelligent inspection systems that can provide uniform, high-speed, and precise defect detection. With the growth of deep learning, Convolutional Neural Networks (CNNs) have been a favored option for visual inspection applications, such as tablet defect detection. CNNs have performed well in image classification and object detection. Nevertheless, their performance can degrade in the event that the defects are faint or when the dataset is small and imbalanced. In addition, CNNs tend to concern themselves with local patterns and fail to perform well in incorporating global context. To overcome such constraints, Vision Transformers (ViTs) have proved to be an effective alternative, making use of self-attention mechanisms in order to learn both local and global dependencies of an image. This research discusses the use of a light ViT-based deep learning model for real-time and precise detection of tablet defects. By taking advantage of the strengths of ViTs coupled with efficient design of the model, this research seeks to enhance inspection precision, minimize false positives, and facilitate the application of AI-powered solutions in pharma production.



2025 The Author(s) 2025. Published by Springer Nature. This is an Open Access article distributed under the terms of the Creative Commons Attribution License (CC BY) 4.0 International License. (ICECONF-2025) | 1798-312-9876-5/23100-02025 IEEE | DOI: 10.1109/ICECONF544-23-1119931

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Mrs. Kanmani B S
Assistant Professor
Department of Electronics and
Communication Engineering

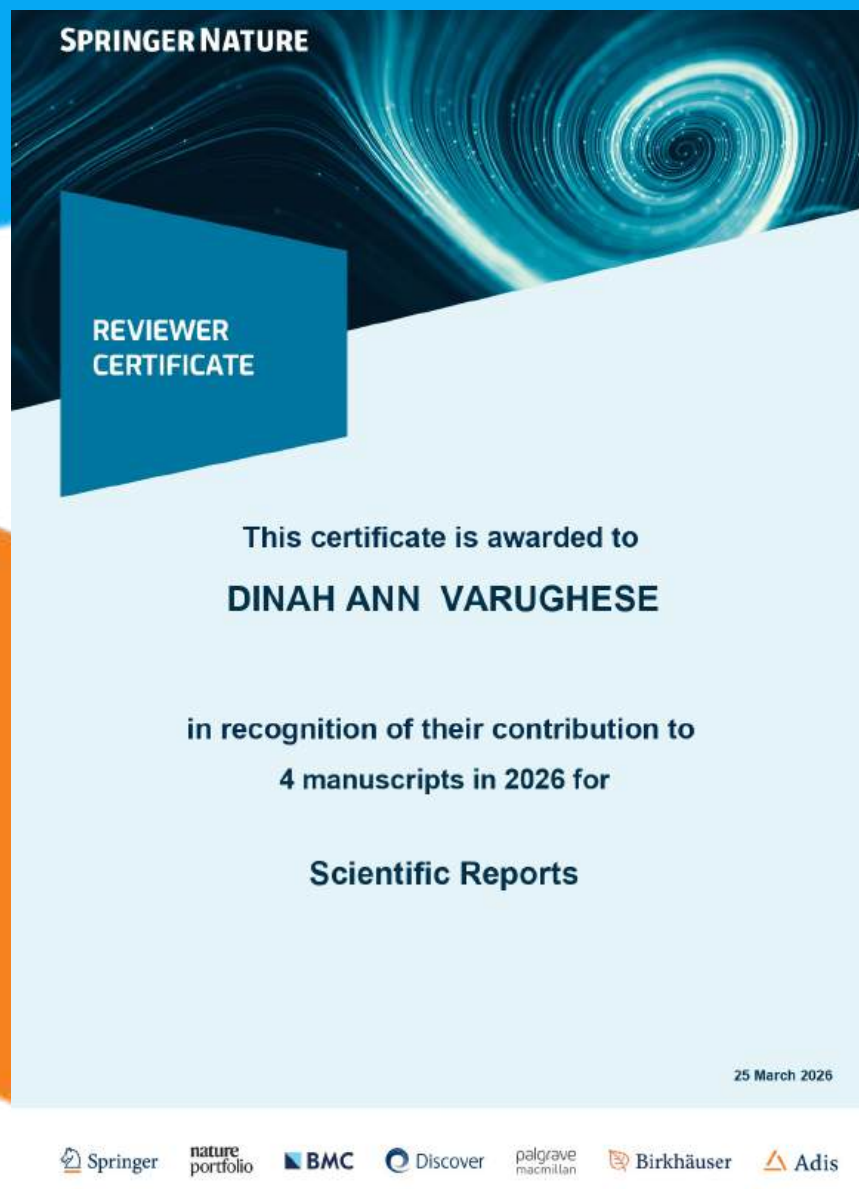
Prof. Kanmani B S, Assistant Professor, Department of Electronics and Communication Engineering, Dayananda Sagar University, actively participated in the International Congress on Industry 5.0: Human-Centric and Sustainable Development, held on 6th and 7th February 2026 at Dayananda Sagar College of Engineering. The event focused on innovation, sustainability, and human-centered technological advancements aligned with Industry 5.0.





Ms. Dinah Ann Varughese
Assistant Professor
Department of Electronics and
Communication Engineering

Prof. Dinah Ann Varughese, Assistant Professor, Department of Electronics and Communication Engineering, Dayananda Sagar University, served as a reviewer for four manuscripts submitted to Scientific Reports (Springer Nature) in 2026, contributing to the evaluation of high-quality research in artificial intelligence, including studies on deep learning models for classification and segmentation across diverse application domains.



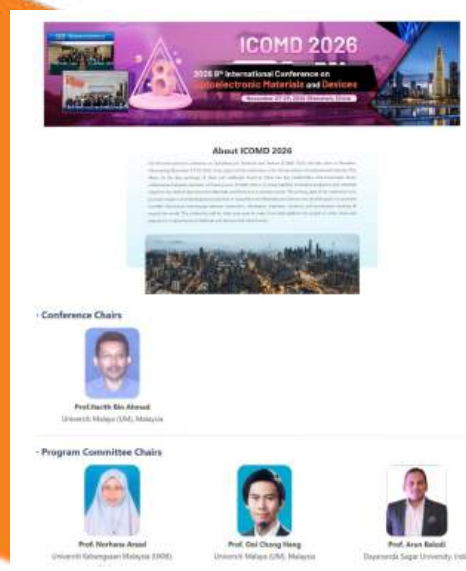


Dr. Arun Balodi
Chairman & Professor
Department of Electronics and
Communication Engineering

1) Dr. Arun Balodi has been appointed as the Technical Program Committee Chair for the 8th International Conference on Optoelectronic Materials and Devices (ICOMD 2026), scheduled to be held from November 27–29, 2026 in Shenzhen, recognizing his expertise and contributions to the field.



2) Dr. Arun Balodi has been recognized for his role as a Conference Chair at an international conference, highlighting his leadership and contributions to advancing research and collaboration in the field of engineering and technology.





Dr. Arun Balodi
Chairman & Professor
Department of Electronics and
Communication Engineering

3) Dr. Arun Balodi was honored with a Certificate of Appreciation for serving as a Program Track Chair at the IEEE Innovations in Machine, Engineering and Digital (IMED) Conference 2026. The conference was held on March 6–7, 2026, at Jesselton University College, Malaysia.

This recognition highlights Dr. Balodi’s academic contribution and active involvement in international research and conference activities. The department congratulates him on this achievement and wishes him continued success.





Dr. Vinu R
Associate Professor
Department of Electronics and
Communication Engineering

1) Dr. Vinu.R, Associate Professor, Department of ECE, Dayananda Sagar University, has co-authored a research paper titled “An Integrated Sensor-Based Machine Learning System for Predicting Crops and Fertilizers” presented in 2025 IEEE 22nd India Council International Conference.

Conferences > 2025 IEEE 22nd India Council

An Integrated Sensor-Based Machine Learning System for Predicting Crops and Fertilizers

Publisher: IEEE [Cite This](#) [PDF](#)

Sumatra.M.N.; Vinu.R.; Sillelha.Y.; Syed.Aleebou.Rahman; Sanku.K.; Kayastha.G. All Authors

Full Text Views

Abstract: Selecting suitable crops based on soil nutrient composition, including nitrogen (N), phosphorus (P), potassium (K), and other essential elements, is a significant challenge for farmers. Traditional soil testing methods are time-consuming, requiring several weeks for laboratory results, and often do not include crop recommendations. To address this issue, we propose a system integrating sensor technology with machine learning algorithms such as Random Forest, Naive Bayes, and KNN classifiers to analyse soil properties in real time. Sensors measure key soil parameters such as N, P, K, pH, temperature, and humidity, transmitting real time data to three machine learning models implemented in Python. The proposed system then predicts three optimal fertilizer and crop choices, enhancing both yield and soil sustainability. Instead of suggesting generic fertilizers, the model detects nutrient deficiencies and recommends only the necessary supplements. Using multiple algorithms, it generates three crop and fertilizer options, giving farmers the flexibility to choose the best fit for their needs. For random data samples collected from nearby our areas, proposed method predicts Nitrogen, Phosphorus, Potassium and pH with the accuracy of 85.24%, 87.95%, 87.23% and 100% respectively.

Published in: 2025 IEEE 22nd India Council International Conference (INDICON)

Date of Conference: 18-20 December 2025 DOI: 10.1109/INDICON60490.2025.11302969

Date Added to IEEE Xplore: 20 February 2026 Publisher: IEEE

2) Dr. Vinu.R, Associate Professor, Department of ECE, Dayananda Sagar University, has co-authored a research paper titled “Single-event transient analysis on radiation-hardened SiGe and GaN ringfet's using 3D TCAD simulations” published in Discover Materials. March 6,2026

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Single-event transient analysis on radiation-hardened SiGe and GaN ringfet's using 3D TCAD simulations

Research | [Open access](#) | Published: 06 March 2026
article number, (2026) [Cite this article](#)

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R. Vinu

Department of Electronics and Communication Engineering, Dayananda Sagar University, Bangalore, 560068, India

Search author on: [PubMed](#) [Google Scholar](#)

M. Ramya, K. K. Nagarajan, R. Binowesley, A. J. Bhuvaneshwari, P. Kaythry, K. J. Jegadish Kumar, R. Vinu, C. Parthasarathy & S. Gomathi

85 Accesses [Explore all metrics](#)

Sections **References**

[Abstract](#)
[Data availability](#)



Jaishree Ramadevaru
Assistant Professor
Department of Electronics and
Communication Engineering

Prof. Jaishree R Devaru, Dr. Divyashree H B, Prof. Kokila S, and Dr. Supraja Eduru have successfully published a patent titled “System and Method for Intelligent Crop Disease Detection, Prediction, and Proactive Treatment” in the Indian Patent Office Journal on 20 February 2026.

This work focuses on smart agriculture using machine learning and sensor-based technologies for real-time crop disease detection and management. The department congratulates the authors on this achievement.

(12) PATENT APPLICATION PUBLICATION	(21) Application No. 202641012365 A				
(19) INDIA					
(22) Date of filing of Application :05/02/2026	(43) Publication Date : 20/02/2026				
(54) Title of the invention : System and Method for Intelligent Crop Disease Detection, Prediction, and Proactive Treatment					
(51) International classification	<table border="1"> <tr> <td>G06V 10/364, G06V 20/10, G06V 10/774, G06K 9/62, G06V 10/82</td> <td>(71) Name of Applicant : 1)Dayananda Sagar University Address of Applicant :Devarakaggalhalli, Harohalli, Kamakuru Road,Bengaluru South District-562 112,Karnataka,India, Karnataka India</td> </tr> <tr> <td></td> <td>(72) Name of Inventor : 1)Jaishree R Devaru 2)Divyashree H B 3)Kokila S 4)Supraja Eduru 5)Hemakar N 6)Kishan M 7)Madhuri V 8)Malikarjun T D</td> </tr> </table>	G06V 10/364, G06V 20/10, G06V 10/774, G06K 9/62, G06V 10/82	(71) Name of Applicant : 1)Dayananda Sagar University Address of Applicant :Devarakaggalhalli, Harohalli, Kamakuru Road,Bengaluru South District-562 112,Karnataka,India, Karnataka India		(72) Name of Inventor : 1)Jaishree R Devaru 2)Divyashree H B 3)Kokila S 4)Supraja Eduru 5)Hemakar N 6)Kishan M 7)Madhuri V 8)Malikarjun T D
G06V 10/364, G06V 20/10, G06V 10/774, G06K 9/62, G06V 10/82	(71) Name of Applicant : 1)Dayananda Sagar University Address of Applicant :Devarakaggalhalli, Harohalli, Kamakuru Road,Bengaluru South District-562 112,Karnataka,India, Karnataka India				
	(72) Name of Inventor : 1)Jaishree R Devaru 2)Divyashree H B 3)Kokila S 4)Supraja Eduru 5)Hemakar N 6)Kishan M 7)Madhuri V 8)Malikarjun T D				
(31) Priority Document No	NA				
(32) Priority Date	NA				
(33) Name of priority country	NA				
(86) International Application No	:				
Filing Date	:01/01/1900				
(87) International Publication No	NA				
(61) Patent of Addition to Application Number	NA				
Filing Date	NA				
(62) Divisional to Application Number	NA				
Filing Date	NA				
(57) Abstract					
Title: System and Method for Intelligent Crop Disease Detection, Prediction, and Proactive Treatment The present disclosure pertains to a smart agriculture system for real-time crop disease detection, forecasting, and treatment guidance, with specific application to tomato plants. The system integrates environmental sensing and leaf image analysis using a hybrid quantum-classical machine learning framework to improve accuracy and robustness under real field conditions. Distributed sensor nodes collect temperature, humidity, soil moisture, and light intensity data, while a vision-based classifier analyzes leaf images captured by a mobile platform. Sensor-based inference and image-based classification are fused to enable reliable disease identification even with limited agricultural datasets. The disclosure further incorporates a disease forecasting module that predicts disease risk within a four-to-seven-day window, enabling proactive intervention. Upon detection, the system generates farmer-friendly treatment guidance through machine-readable code-based cards and on-device assistance. Designed for real-time, offline field deployment, the technology supports scalable precision agriculture and improved crop health management.					
No. of Pages : 25 No. of Claims : 8					



Dr. Supraja Eduru
Assistant Professor
Department of Electronics and
Communication Engineering

Dr. Supraja Eduru, Dr. Divyashree H B, Prof. Jaishree R Devaru, and Prof. Kokila S have successfully published a patent titled “Intelligent Traffic Signal Control System and Method for Autonomous Emergency Vehicle Prioritization and Dynamic Green Corridor Generation” in the Indian Patent Office Journal on 20 February 2026.

The work focuses on developing an intelligent traffic management system to prioritize emergency vehicles and improve response efficiency. The department congratulates the authors on this achievement.

(12) PATENT APPLICATION PUBLICATION	(21) Application No:202641012158 A
(19) INDIA	(43) Publication Date : 2002/2026
(22) Date of filing of Application :05/02/2026	
(54) Title of the invention : Intelligent Traffic Signal Control System and Method for Autonomous Emergency Vehicle Prioritization and Dynamic Green Corridor Generation	
(51) International classification	G08G 1/07, G08C 1/06, G08G 1/081, G08G 1/01, G08G 1/087
(31) Priority Document No	: NA
(32) Priority Date	: NA
(33) Name of priority country	: NA
(86) International Application No	: : 01/01/1900
(87) International Publication No	: NA
(64) Patent of Addition to Application Number	: NA
(62) Divisional to Application Number	: NA
(57) Abstract:	
Title: Intelligent Traffic Signal Control System and Method for Autonomous Emergency Vehicle Prioritization and Dynamic Green Corridor Generation. An intelligent traffic signaling system is disclosed for autonomously prioritizing ambulances at road intersections by dynamically creating a green corridor without human intervention. The system operates as a standalone unit interfacing directly with existing traffic signal infrastructure and employs one or more complementary emergency vehicle detection mechanisms, including device-enabled transmitter-receiver communication, audio-based siren detection using machine learning classification, and camera-based vision detection. A local controller executes real-time decision logic to override normal traffic signal cycles, selectively granting a green signal to the ambulance approach lane while holding conflicting directions at red, and automatically restoring normal operation after passage. The system supports fallback operation between detection modalities, directional inference to prevent incorrect lane activation, and priority handling for multiple emergency vehicles. By eliminating reliance on GPS, mobile applications, centralized control rooms, and continuous internet connectivity, the invention provides a scalable, cost-effective, privacy-preserving, and reliable solution for reducing ambulance delay and improving emergency response outcomes.	
No. of Pages : 21 No. of Claims : 9	



Dr. Divyashree H B
Assistant Professor
Department of Electronics and
Communication Engineering

1) Dr. Divyashree H B, Dr. Puttamadappa C, Dr. Arun Balodi, Dr. Supraja Eduru, Prof. Jaishree Ramadevaru, and Prof. Kokila S published a patent titled “System and Method for Voice-Activated Emergency Alerting and Real-Time Location Tracking” in the Indian Patent Office Journal on 20 February 2026 under Dayananda Sagar University.



2) Dr. Divyashree H B, Dr. Puttamadappa C, Dr. Arun Balodi, Prof. Kokila S, Prof. Jaishree Ramadevaru, and Dr. Supraja Eduru have successfully published a patent titled “Real-Time EEG-Based P300 System for Neurocognitive Anomaly Detection in ADHD and Autism” in the Indian Patent Office Journal on 20 February 2026 under Dayananda Sagar University.





Divyashree H B
Assistant Professor
Department of Electronics and
Communication Engineering

3) Divyashree H B, Puttamadappa C, Arun Balodi, Jaishree Ramadevaru, Kokila S, and Supraja Eduru have successfully published a patent titled “Terrain-Adaptive Wireless Hexapod Robot with Tripod Gait Control and Integrated Real-Time Visual Monitoring” in the Indian Patent Office Journal on 20 February 2026 under Dayananda Sagar University.

The invention presents a terrain-adaptive hexapod robot with tripod gait control, wireless operation, and real-time visual monitoring, enabling stable movement in uneven environments and supporting applications such as disaster response, inspection, and surveillance.

(12) PATENT APPLICATION PUBLICATION	(21) Application No.202641012357 A
(19) INDIA	
(22) Date of filing of Application :05/02/2026	(43) Publication Date : 20/02/2026
(54) Title of the invention : Terrain-Adaptive Wireless Hexapod Robot with Tripod Gait Control and Integrated Real-Time Visual Monitoring	
(51) International classification	B62D 57032 B25J 5/00 B25J 9/16 B25J 13/08 B62D 57024
(31) Priority Document No	NA
(32) Priority Date	NA
(33) Name of priority country	NA
(86) International Application No	01/01/1900
(87) International Publication No	NA
(61) Patent of Addition to Application Number	NA
(62) Divisional to Application Number	NA
(63) Filing Date	NA
(71) Name of Applicant :	1)Dayananda Sagar University
	Address of Applicant :Devanagallahalli, Hanohalli, Kankapura, Roud,Bengaluru South District-562 112,Karnataka,India, Karnataka,India
(72) Name of Inventor :	1)Divyashree H B
	2)Puttamadappa C
	3)Arun Balodi
	4)Jaishree Ramadevaru
	5)Kokila S
	6)Supraja Eduru
	7)Prashantha Kumar H G
	8)Shivamma D
	9)M Swathi
	10)Chaitra S
	11)K. Shalini
	12)Mamatha D
(57) Abstract :	
Title: Terrain-Adaptive Wireless Hexapod Robot with Tripod Gait Control and Integrated Real-Time Visual Monitoring This invention describes a six-legged hexapod robot designed for stable and adaptive mobility across uneven and hazardous terrains. The robot features a lightweight structural chassis and a three-servo actuation system, with each servo controlling a pair of legs to execute a synchronized tripod gait for enhanced balance and reliability. A central microcontroller manages servo control and wireless communication, receiving directional commands from a mobile application through a short-range communication interface. The system is further equipped with a compact camera module that provides real-time visual streaming to support remote navigation and environmental monitoring. Practical testing demonstrates effective forward, backward, and turning motions, along with the ability to carry lightweight payloads. With its combination of terrain adaptability, wireless operability, and live visual feedback, the hexapod robot is well suited for disaster response, inspection, reconnaissance, and other applications requiring safe, remote operation in complex environments.	
No. of Pages : 20 No. of Claims : 10	




Prof. Hari Haran
Assistant Professor
Department of Mathematics

Dr. Hari Haran published the research article entitled “Lenti-virus progression in a time-fractionality mathematical perspective” in the journal Nonlinear Studies, published by Cambridge Scientific Publishers on 02nd Mar 2026. ISSN: 13598678, 21534373, H-Index: 22, Indexation: Scopus indexed Q4 journal, Journal Impact Factor: 0.54, SJR: 0.229, Vol. 33, issue 1 , page no. 55-71.

Research Article

Spatio-temporal dynamical behavior of a nonlinear reaction-diffusion model with population variability

S. Hariharan, L. Shangerganesh, J. Manimaran, M. A. Zaky , M. Babatin & A. S. Hendy

Received 22 Feb 2025, Accepted 21 Jan 2026, Published online: 17 Feb 2026

 Cite this article  <https://doi.org/10.1080/00036811.2026.2629418>

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 Full Article

 Figures & data

 References

 Citations

 Metrics

 Reprints & Permissions

 Read this

Abstract

The spread of infectious diseases across regions is a global phenomenon, often complicated by the concurrent influence of multiple diseases within the same time frame. This paper explores the dynamics of disease transmission between two population groups, each affected by a distinct disease. The model incorporates transmission parameters dependent on spatial variables, while population dynamics are examined over both time and spatial dimensions. This spatially sensitive approach to model parameters enhances the applicability of findings to real-world scenarios. Our study is framed within a reaction-diffusion, multi-SIR population dynamics model. Initially, we investigate the well-posedness of the proposed model's solution via semigroup theory. Steady states are determined, and leveraging the disease-free steady state and the next-generation operator, we derive the basic reproduction number. Furthermore, we analyze the stability properties of these steady states through eigenvalue problems in partial differential equations. Finally, numerical simulations are performed to validate the proposed model with spatially dependent data, underscoring its relevance to spatially structured disease dynamics.



Prof. Hari Haran
Assistant Professor
Department of Mathematics



Prof. Mahalakshmi P
Assistant Professor
Department of Mathematics



Prof. Hari Haran
Assistant Professor
Department of Mathematics

Title of the Invention: Multilevel Group- Synchronized Health Diagnostic System

Name of Inventor: Hariharan S, Mahalakshmi P, M Lakshmanan

Name of the Applicant: Dayananda Sagar University, Devarakaggalahalli, Harohalli, Kanakapura Main Road, Bengaluru South District, Karnataka- 562 112.

Date of Publication: 20/03/2026

Application No. 202641015412A

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202641015412 A

(19) INDIA

(22) Date of filing of Application :12/02/2026

(43) Publication Date : 20/03/2026

(54) Title of the invention : Multilevel Group-Synchronized Health Diagnostic System

(51) International classification	:A61B 5/00, G16H 50/30, G16H 50/20, A61B 5/0205, G16H 40/67	(71)Name of Applicant : 1)Dayananda Sagar University Address of Applicant :Devarakaggalahalli, Harohalli, Kanakapura Road,Bengaluru South District-562 112,Karnataka,India. Karnataka India
(31) Priority Document No	:NA	(72)Name of Inventor : 1)Hariharan S 2)Mahalakshmi P 3)M Lakshmanan
(32) Priority Date	:NA	
(33) Name of priority country	:NA	
(86) International Application No	:	
Filing Date	:01/01/1900	
(87) International Publication No	: NA	
(61) Patent of Addition to Application Number	:NA	
Filing Date	:NA	
(62) Divisional to Application Number	:NA	
Filing Date	:NA	

(57) Abstract :

Title: Multilevel Group-Synchronized Health Diagnostic System The present invention discloses a multi-level health diagnostic system for early detection of illness, physiological fatigue, and metabolic instability in individuals and organized groups. The system integrates multimodal physiological data acquired from wearable devices, smart weight measurement units, and privacy-preserving voice rhythm analysis. Collected data are preprocessed and analyzed using predictive metabolic growth modeling to estimate expected physiological behavior and quantify individual deviation. In addition to individual assessment, the system performs group-level comparative evaluation using structured correlation and graph-based analysis to identify coordinated physiological anomalies within a shared environment. A unified analytical framework combines individual and group indicators to classify health risk levels and generate timely alerts and actionable insights. The invention enables proactive health monitoring and early warning in collective settings such as sports teams, classrooms, and group activity environments, overcoming the limitations of individual-only health monitoring systems.

No. of Pages : 21 No. of Claims : 7



Prof. George Fernandez
Assistant Professor
Department of Mathematics



Prof. Arpita Paria
Assistant Professor
Department of Mathematics

Title of the Invention: Adaptive Distributed Structural Battery Architecture for Space-Optimized Electric Buses

Name of Inventor: Lavanya K, Dr. George Fernandez, Prof. Arpita Paria, Dr. Om Prakash Keshri, Prof. Vishwas D B, Aishwarya K, Prof. Bharath M B, Prof. Mala B A, Dr. Santosh Kumar J

Name of the Applicant:

- a) **Dayananda Sagar Academy of Technology and Mangement,**
- b) **Dayananda Sagar University**

Date of Publication: **20/03/2026**

Application No. **202641026799A**

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :07/03/2026

(21) Application No.202641026799 A

(43) Publication Date : 20/03/2026

(54) Title of the invention : Adaptive Distributed Structural Battery Architecture for Space-Optimized Electric Buses

(51) International classification :H01M 10/625, B60L 50/64, H01M 10/613, H01M 50/249, H01M 10/6556

(31) Priority Document No :NA

(32) Priority Date :NA

(33) Name of priority country :NA

(86) International Application No :
Filing Date :01/01/1900

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

(71)Name of Applicant :
1)Dayananda Sagar academy of technology and management
Address of Applicant :Assistant Professor Department of computer science and Design, Dayananda Sagar academy of technology and management, Bengaluru, Karnataka mail id lavanya960@gmail.com Bengaluru Karnataka India

2)Dayananda Sagar University

(72)Name of Inventor :
1)Lavanya K
2)Dr. George Fernandez I
3)Prof. Arpita Paria
4)Dr. Om Prakash Keshri
5)Prof. Viswas D B
6)Aishwarya k
7)Prof. Bharath M B
8)Prof. Mala B A
9)Dr.Santosh Kumar J

(57) Abstract :

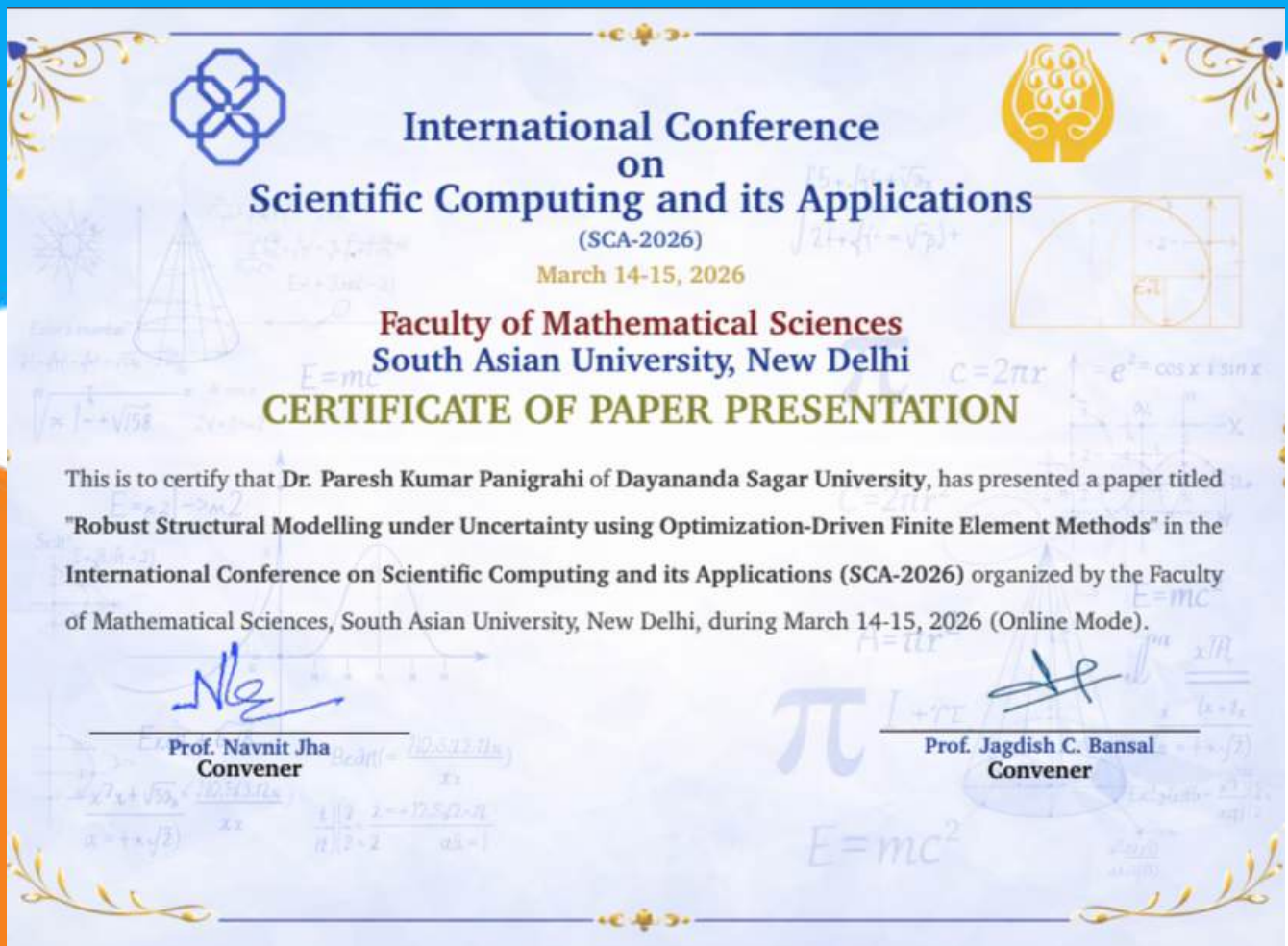
Current high capacity and structural efficiency electric bus models use relatively large, monolithic battery packs located within the structure, taking up a large portion of its interior space (and therefore compromising seating density and thermal management). This invention presents a distributed structural battery design, which places modular battery modules into the chassis members, floor sandwich panels and side structures of the vehicle. This makes each load-carrying structural member a combination load bearing member and battery container. Zoned battery management systems are used to adjust the power flow between individual zones and turn specific zones on and off depending on load (e.g. Passengers, incline, vehicle speed), etc. The structural members are also hollowed out with integrated thermal channels for dissipating battery heat without large, auxiliary cooling components. The modular batteries are arranged such that their components can be exchanged quickly as a unit, thereby increasing serviceability and isolating thermal and electrical faults between zones. By distributed the battery capacity across a multitude of structural members, the energy density of the vehicle is maintained, but much greater interior room becomes available for passengers, which offers increased seating capacity. This further allows for optimal weight distribution throughout the vehicle and improved operational efficiencies.

No. of Pages : 16 No. of Claims : 6



Prof. Paresh Kumar Panigrahi
Assistant Professor
Department of Mathematics

Dr. Paresh Kumar Panigrahi presented a research article entitled “Robust Structural Modelling under Uncertainty using Optimization-Driven Finite Element Methods” in the International Conference on Scientific Computing and its Applications(SCA-2026) organised by Faculty of Mathematical Sciences, South Asian University, New Delhi, during 14-15 March 2026 by Online mode.






Prof. Kruthik
Assistant Professor
Department of Mathematics


Dr. Kruthik gave a invited talk on “Study of linear and nonlinear stability of natural convection in nanofluids with internal heat generation: Rigid-Free boundaries” held during the National Level Conference on “Advanced Cutting Edge Research and Innovation in Science and Technology” at Koregaon, Maharashtra-423 601 on 06th Mar 2026.

Rayat Shikshan Sanstha's Estd. : June 1965



Principal
Prof.(Dr.) Madhav Sarode
M.Sc., Ph.D

**SHRI SADGURU GANGAGEER MAHARAJ SCIENCE,
GAUTAM ARTS & SANJIVANI COMMERCE COLLEGE**



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Kopargaon - 423 601, Dist. Ahilyanagar (M.S.) India. • NAAC-Reaccredited 'A++' Grade (CGPA : 3.69)
• Best College Award by Savitribai Phule Pune University • ISO 9001:2021 Certified
Founder : Padmabhushan Dr. Karmaveer Bhaurao Patil, D.Litt.

Ref. No. : 1957/2025-26 Date : 02/03/2026

To,

Hon. Dr. Kruthik P.S.
Assistant Professor,
Department of Mathematics
Dayananda Sagar University,
Bengaluru.

Subject: Invitation as a 'Resource Person' for National Conference on ACRIST-2026.

Respected Sir,

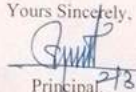
It gives me immense pleasure to share that our college is organizing a two-day “National Conference on Advances in Cutting Edge Research & Innovation in Science & Technology (ACRIST-2026)” held on 5th and 6th March 2026.

On behalf of the organizing committee and the institution, I am happy to invite you as the **resource person** for the mentioned conference.

SSGM College is one of the leading institutions in the rural area dedicated to providing quality education to the downtrodden and economically weaker sections of society. NAAC has re-accredited our college for the 4th cycle with an 'A++' grade (CGPA-3.69). Your esteemed presence and insightful talk will undoubtedly enrich the conference and inspire the participants with your vast knowledge, experience, and contributions to research and academia. We would be truly honored and grateful if you could kindly accept our invitation.

Looking forward for your positive response.

Thanking You,

Yours Sincerely,

Principal, 2/3/26,
S.S.G.M. Science, Gautam Arts and
Sanjivani Commerce College, Kopargaon.



Dr. Srikumar K
Associate Professor
Department of Mathematics

Dr. SRIKUMAR K published the research article entitled “Tribological and Predictive Modelling Analysis of Copper - CNT - Titanium Hybrid Metal Matrix Composites” in the journal “Journal of Bio- and Tribo-Corrosion”, published by Springer Nature on 6th Mar 2026. ISSN: 21984220, 21984239, H-Index: 45, Indexation: Scopus Q2, Web of Science(ESCI), EI Compendex Web of Science(ESCI), Journal Impact Factor: 5.2, SJR: 0427.


DOI: <https://doi.org/10.1007/s40735-026-01135-8>


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Tribological and Predictive Modelling Analysis of Copper - CNT - Titanium Hybrid Metal Matrix Composites

Published: 06 March 2026

Volume 12, article number 72, (2026) [Cite this article](#)

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[Sripad Kulkarni](#), [Mallikarjun Biradar](#), [S. Ramesh](#), [R. PremChand](#), [S. P. Shanmuganatan](#), [Yuvaraja Naik](#), [Mahadeva Prasad](#), [Y. P. Ravitej](#) , [N. Subramani](#), [K. Srikumar](#), [Arun Kumar](#), [V. Sreemathy](#) & [Rekha Shivaram](#)

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Abstract

This paper investigates the wear behaviour of copper-based metal matrix composites (MMCs) reinforced with carbon nanotubes (CNTs) and micro titanium (Ti) particles. Composites containing 0.5–1.5 Wt% CNT and 1–5 Wt% Ti were fabricated using the stir casting technique to ensure uniform reinforcement dispersion. Abrasive wear tests were conducted under a 1 N load at sliding speeds of 200–500 RPM using a pin-on-disc tribometer. Results revealed that the wear rate increased with speed but decreased notably with higher reinforcement levels. The C9 composition (1.5Wt% CNT and 5Wt% Ti) exhibited the lowest wear rate and superior wear resistance. Regression modelling using Linear, Polynomial, Support Vector Regression (SVR), and Random Forest algorithms was applied to predict wear behaviour. Among these, the Polynomial model demonstrated the highest accuracy with an R^2 value close to 0.99 and low mean absolute error, while SVR



Dr. Rahul Kumar
Associate Professor
Department of Mechanical Engineering

Dr. Rahul Kumar, Associate Professor, Department of Mechanical Engineering, has published a research article in the Australian Journal of Mechanical Engineering, a Q2-ranked, Web of Science (ESCI, IF: 1.5) indexed international journal.

The research addresses contemporary challenges in mechanical and sustainable engineering, presenting innovative methodologies and analytical insights aligned with the United Nations Sustainable Development Goals, particularly SDG 12: Responsible Consumption and Production. This achievement reflects his commitment to high-quality research and continued contribution to the university's research ecosystem.

AUSTRALIAN JOURNAL OF MECHANICAL ENGINEERING
<https://doi.org/10.1080/14488466.2026.2631354>



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Cartesian complex fuzzy-based ExpTODIM method: a machine learning-fuzzy decision framework for sustainable PALF-based composites

Divya Zindani^a, Rahul Kumar^b, S. Sukesh^c and Sweta Singh^d

^aDepartment of Mechanical Engineering, Sri Sivasubramanya Nadar (SSNI) College of Engineering, Kalavakkam, India; ^bDepartment of Mechanical Engineering, School of Engineering, Dayananda Sagar University, Bengaluru, Karnataka, India; ^cDhanalakshmi Srinivasan College of Engineering and Technology, Mamallapuram, India

ABSTRACT

The transition toward sustainable materials (SDG12) in the automotive sector necessitates data-driven frameworks. This study proposes a novel hybrid decision-making Exponential TODIM de Decisão Interativa Multicriterio (ExpTODIM) framework, to evaluate and rank PALF-based hybrid polymer composites intended for automotive interior door panel applications. The framework integrates Random Forest Regression (RFR) with the Exponential TODIM (ExpTODIM) method under Cartesian form of Complex Fuzzy Decision Weighted Averaging (CFDWA) and Geometric (CFDWG) aggregation schemes. RFR is employed to derive objective, data-driven weights by quantifying the relative importance of nine key mechanical parameters, including tensile strength, flexural modulus, fracture toughness, and impact resistance. Fracture energy (0.1115549), Young's modulus (0.111553456), and Flexural strength (0.111535261) emerged as the most influential criteria, indicating their strong contribution to overall composite performance. These weights are subsequently used within the ExpTODIM model. Results indicate that the composite fabricated with 0–1 mm/min (0 wt% filler) achieved the highest prospect value (1.00), exhibiting superior tensile and fracture properties essential for stiffness and energy absorption in automotive applications. Comparative sensitivity analyses across criteria weights, attenuation factor (λ), and dominance sensitivity (s) confirmed the robustness of the proposed framework, with RFR-ExpTODIM-CFDWA revealed to be superior compared to with RFR-ExpTODIM-CFDWG.

ARTICLE HISTORY

Received 24 November 2025
Accepted 6 February 2026

KEYWORDS

Random Forest Regression (RFR); Exponential TODIM (ExpTODIM); complex fuzzy decision weighted averaging (CFDWA); complex fuzzy decision weighted geometric (CFDWG); natural fibre composites; TODIM; automotive door panels

1. Introduction

The advancement of sustainable composite materials has become a central focus in modern engineering design, particularly within the automotive sector, which continuously seeks innovative solutions to improve performance, reduce environmental impact, and enhance energy efficiency. Moving towards the utilisation of natural fibrous filler reinforced polymer composites, the automotive industry now recognises their potential as viable substitutes for synthetic composites in interior components such as door panels and dashboard substrates (Kumar and Bhowmik, 2021). This transition is driven by the dual objectives of achieving lightweight structural efficiency and environmental sustainability, two essential attributes for next-generation vehicle design.

While traditional glass fibre-reinforced composites have long dominated the field due to their high strength and stiffness, their non-biodegradability, high energy processing demands, and limited recyclability have encouraged a shift toward bio-based reinforcements. Among the natural fibres, Pineapple Leaf Fibre (PALF) stands out as an attractive candidate due to its high specific strength, renewability, low cost, and

biodegradability. PALF-reinforced composites offer a compelling balance between mechanical performance and sustainability, making them promise for interior automotive applications that demand structural resilience and ecological compatibility.

However, selection of material with optimum composition for the intended application requires balancing conflicting performance parameters such as flexural strength, fracture toughness, and impact resistance, alongside density, cost, and environmental considerations. The optimisation of these mechanical characteristics is non-trivial because enhancing one property often leads to compromises in another, necessitating a systematic decision-support mechanism to evaluate and rank alternative material configurations effectively.

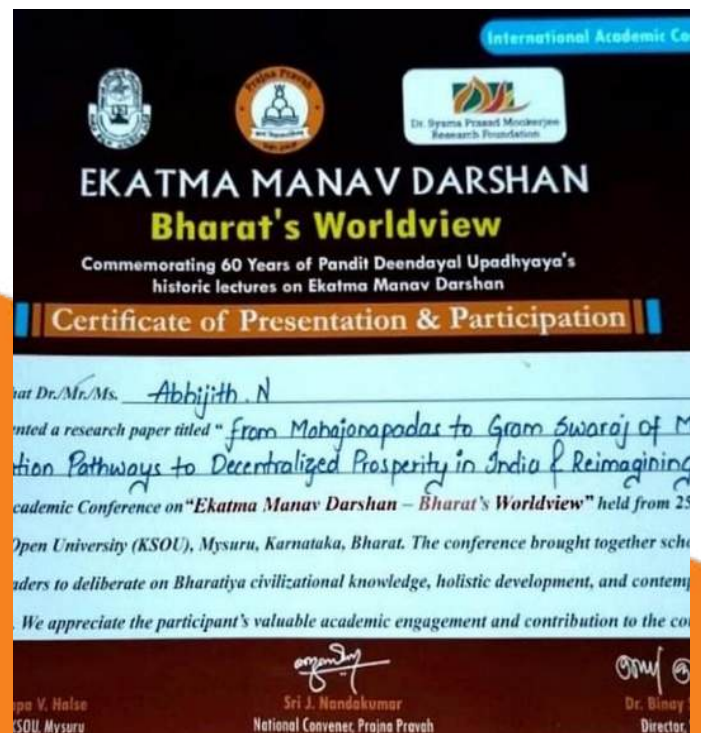
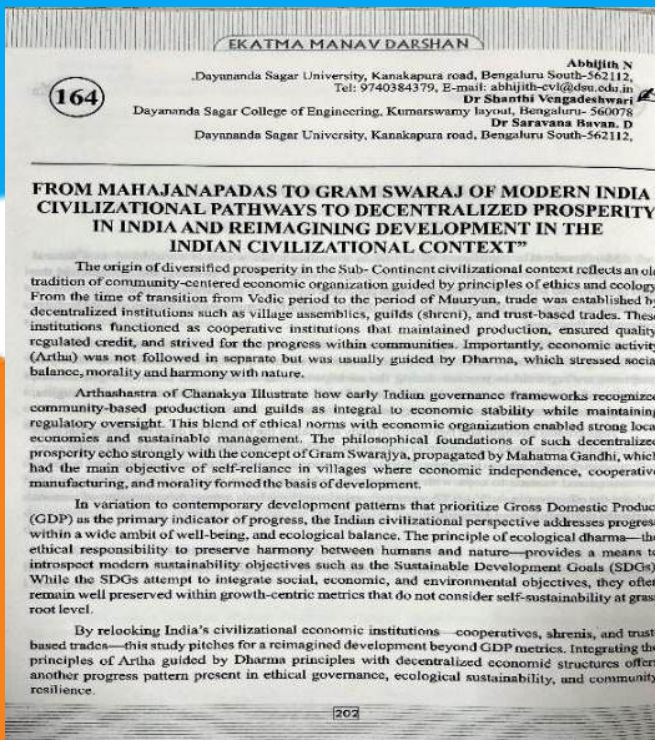
In recent years, extensive research has been devoted to developing and optimising natural fibre-reinforced polymer composites (NFCs) as viable, sustainable alternatives to synthetic composites. Their renewable nature, biodegradability, low cost, and lightweight characteristics have positioned them as promising materials for various structural and semi-structural applications. However, achieving an optimal balance

CONTACT Divya Zindani zindandivya@gmail.com
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Prof. Abhijith N
Assistant Professor
Department of Mechanical Engineering

Abhijith N, Assistant Professor, Department of Mechanical Engineering, DSU–SoE, presented a research paper titled “From Mahajanapadas to Gram Swaraj of Modern India: Civilizational Pathways to Decentralized Prosperity in India and Reimagining” at the International Conference on “Ekatma Manav Darshan – Bharat’s Worldview,” held from 25–27 March 2026 at Karnataka State Open University, Mysuru. He was awarded a certificate in recognition of his participation and presentation at the conference.





Prof. Ravitej Y P
Assistant Professor
Department of Mechanical Engineering

Dr. Ravitej Y P, Department of Mechanical Engineering, Dayananda Sagar University, published a research paper titled “Tribological and Predictive Modelling Analysis of Copper–CNT–Titanium Hybrid Metal Matrix Composites” in the Journal of Bio- and Tribo-Corrosion on 6 March 2026.

The study investigates wear behaviour, friction characteristics, and overall material performance using advanced analytical techniques. It highlights the role of reinforcement synergy in enhancing durability, offering valuable insights for high-performance engineering applications, particularly in aerospace and automotive components.


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Tribological and Predictive Modelling Analysis of Copper – CNT – Titanium Hybrid Metal Matrix Composites

Published: 06 March 2026

Volume 12, article number 72, (2026) [Cite this article](#)

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[Sripad Kulkarni](#), [Mallikarjun Biradar](#), [S. Ramesh](#), [R. PremChand](#), [S. P. Shanmuganatan](#), [Yuvaraja Naik](#), [Mahadeva Prasad](#), [Y. P. Ravitej](#) , [N. Subramani](#), [K. Srikumar](#), [Arun Kumar](#), [V. Sreemathy](#) & [Rekha Shivaram](#)

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Dr. Naseem Khayum
Assistant Professor
Department of Mechanical Engineering

Dr. Naseem Khayum, Assistant Professor, Department of Mechanical Engineering, has secured a funded research project worth ₹9 lakh under the Indian Knowledge Systems (IKS) Division, Ministry of Education, Government of India, through the BG Samvahan Karyakram.

2) Dr. Naseem Khayum, Assistant Professor, Department of Mechanical Engineering, has published a research article titled “Effect of Baffle Number on Thermal and Hydraulic Performance of a Helical Solar Air Heater” in the prestigious international journal Solar Energy (Elsevier).

45	Samvahan-Yantra: Documentation and Functional Reconstruction of Yantras Described in Classical Indian Engineering Texts	Naseem Khayum	Dayananda Sagar University
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ELSEVIER




Volume 310, 15 May 2026, 114488



Effect of baffle number on thermal and hydraulic performance of a helical solar air heater

Walid Ben Amara ^a, Abdallah Bouabidi ^{a b}  , Ali M. Ashour ^c, Yassine Cherif ^d, Rami Belguith ^d, Naseem Khayum ^e

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<https://doi.org/10.1016/j.solener.2026.114488> 

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Dr. Puneeth N
Assistant Professor
Department of Artificial Intelligence & Robotics

Dr. Puneeth N successfully completed a one-week Faculty Development Program (FDP) on “Generative & Agentic AI – Tools & Demos,” conducted by Sardar Vallabhbhai National Institute of Technology (SVNIT), Surat, in association with IEEE Gujarat Section and Pantech Solutions. The program focused on emerging trends in generative and agentic artificial intelligence, offering hands-on exposure to advanced tools and practical demonstrations. It aimed at enhancing faculty expertise in cutting-edge AI technologies and their applications in teaching and research. Dr. Puneeth’s participation reflects the institution’s commitment to continuous professional development, innovation, and strengthening academic and research capabilities in advanced technological domains.



SV National Institute of Technology , Surat
FACULTY DEVELOPMENT PROGRAM on
GENERATIVE & AGENTIC AI – Tools & Demos

A one-week CSR initiative by SVNIT, Surat and Pantech Solutions



Dr. Raguvaran S
Associate Professor
Department of Artificial Intelligence & Robotics

Dr. S. Raguvaran, Associate Professor in the School of Engineering at Dayananda Sagar University, served as a Session Chair at the 2nd International Conference on Multidisciplinary Breakthroughs and NextGen Technologies (ICMBNT–2026), held on 12–13 March 2026 at Universitas Udayana, Bali, Indonesia. The conference, organized by ISIUS in association with the Society for Cyber Intelligent System, brought together global researchers and academicians. Dr. Raguvaran effectively coordinated technical sessions, facilitated scholarly discussions, and ensured smooth conduct of presentations. He received a Certificate of Appreciation in recognition of his contribution, reflecting the university’s commitment to academic excellence and international engagement and global visibility.





Dr. Bharath Kumar S
Assistant Professor
Department of Artificial Intelligence & Robotics

Dr. Bharath Kumar S, faculty member at Dayananda Sagar University, successfully completed a Faculty Development Program (FDP) on Cyber Security organized by SkillDzire in collaboration with AICTE. Conducted from 9th March to 21st March 2026, the program focused on enhancing knowledge in cybersecurity concepts, tools, and best practices. The FDP provided valuable insights into emerging security challenges and solutions in the digital era. Dr. Bharath Kumar S's participation reflects the institution's commitment to continuous professional development and academic excellence. Such initiatives empower faculty to stay updated with evolving technologies and contribute effectively to teaching, research, and innovation in the field of cybersecurity.



Ms. Z Barkath Nisha (ENG23CS0235), Ms. Abburi Manasa (ENG23CS0240), Ms. Yashmitha P (ENG23CS0230), 3rd year CSE students has a Team Pseudocoders participated and was awarded 2nd Runner up place with Rs. 5000 Cash Prize for the Problem statement “Disaster Response Optimization” during 27th February at Hackanova in NMKRV College.



Ms. Devika Ashwin Desai (ENG25CS0903), 1st year CSE student has participated in the Karnataka State Classic Powerlifting Championship held at Mini Town Hall Mangalore Karnataka From 27-28 February 2026 and Secured first Place with Gold Medal in the 84+ Junior Women's Category and also Selected For Upcoming Nationals. And Lifted the Heaviest in the Juniors Category And The Second Best Lifter Of Karnataka.



Ms. Devika Ashwin Desai (ENG25CS0903), 1st year CSE student has participated in the South India Equipped Powerlifting Championship -2026 held at Diamond Jubilee Auditorium Race Course Road Bangalore on 7-8 March 2026 and won Gold Medal in the 84+ Junior category.



Ms. Sushmitha B R (ENG23CS0664), Ms. Likhitha N (ENG23CS0351) Ms. Saptami NK (ENG23CS0651), 3rd year CSE students has participated in the Final Round of INCEPTRIX Hackathon 2026, held on 27th and 28th February 2026 at JAIN Faculty of Engineering & Technology (FET), under the theme “Beyond Intelligent Innovation – systems that shape reality”.



Dayananda Sagar University, under the Karnataka State Council for Science and Technology (KSCST) 49th Series Student Project Programme (SPP) for the academic year 2025–26, has received approval for sponsorship of several student project proposals. The School of Engineering secured a total of 10 sponsored projects, with the Department of Computer Science and Engineering receiving 5 projects, the Department of CSE (AI & ML) securing 3 projects, and the Department of CSE (Data Science) obtaining 2 projects

KARNATAKA STATE COUNCIL FOR SCIENCE AND TECHNOLOGY
 Indian Institute of Science Campus, Bengaluru – 560 012
 Website: www.kscst.org.in, https://kscst.karnataka.gov.in | Email: info@kscst.org.in | Tel: 080-2334 1652,2334 8848/8948

49th series of Student Project Programme (SPP): 2025-26
 List of Student Project Proposals Approved for Sponsorship

DAYANANDA SAGAR UNIVERSITY, BENGALURU SOUTH

PROPOSAL REFERENCE NO.	PROJECT TITLE	COURSE	BRANCH	NAME OF THE GUIDE(S)	NAME OF THE STUDENT(S)	AMOUNT SANCTIONED (IN ₹)
49S_MSC_0263	PECTIN-BASED COLON-TARGETED NANOMICROFORMULATION CO-DELIVERING VITAMIN D AND PROBIOTIC FOR PRECISION THERAPY OF INFLAMMATORY BOWEL DISEASE(IBD).	M.Sc	BIOCHEMISTRY AND BIOTECHNOLOGY	Prof. JAYACHANDRA K CHOUDHRI	Mr. HITHASHI COLVIN V B Mr. ABHISHEK C	7,000.00
49S_BE_0164	SMART LECTURE HALL SEAT DETECTION SYSTEM	B.E.	COMPUTER SCIENCE AND ENGINEERING	Prof. MEGHA CHANDEL Prof. CHANDRAKALAL	Ms. SANJANA T Mr. M ABILASH Ms. THANIA U GANIGA Ms. SANJANA S	3,000.00
49S_BE_0191	DUAL-LAYER PIEZOELECTRIC FLOOR TILE WITH IOT-BASED ENERGY GENERATION AND MONITORING SYSTEM	B.E.	COMPUTER SCIENCE AND ENGINEERING	Dr. SRIDHAR S K	Mr. RAJAVARMAN C B Mr. AMAN MUSHTAQE AHMED SAIED Ms. ANAGHA M KAMAT Ms. SRISTIA H Mr. SAJ PRASAD HANDIGUND	4,000.00
49S_BE_2554	REAL-TIME UNDERGROUND VIBRATION DETECTION FOR BORDER INFILTRATION PREVENTION LEVERAGING AI AND WIRELESS EDGE SENSOR NETWORKS	B.E.	COMPUTER SCIENCE AND ENGINEERING	Prof. SHILPA SUDHEENDRAN	Mr. SANGAMESH Mr. SHASHANK SHIVANAND TELI Mr. SHRINIVASAGOUD J PATIL	4,500.00

KARNATAKA STATE COUNCIL FOR SCIENCE AND TECHNOLOGY
 Indian Institute of Science Campus, Bengaluru – 560 012
 Website: www.kscst.org.in, https://kscst.karnataka.gov.in | Email: info@kscst.org.in | Tel: 080-2334 1652,2334 8848/8948

49th series of Student Project Programme (SPP): 2025-26
 List of Student Project Proposals Approved for Sponsorship

349.	49S_BE_2555	SENIOCONNECT: A VOICE-ENABLED MOBILE PLATFORM WITH REGIONAL LANGUAGE SUPPORT FOR ELDERLY WELL-BEING AND GOVERNMENT SCHEME ADVISORY ACROSS INDIA.	B.E.	COMPUTER SCIENCE AND ENGINEERING	Prof. MALAB A	Mr. RAGHAVENDRAGOUD J PATIL Mr. MOHAMMED AMRUL AMAN Mr. PUNEETH S P Mr. RAJA MOHAMMAD	4,000.00
350.	49S_BE_3577	AI-POWERED LEARNING PLATFORM FOR QUALITY EDUCATION IN UNDERSERVED REGIONS FOR SCHOOL TEACHERS AND STUDENTS	B.E.	COMPUTER SCIENCE AND ENGINEERING	Dr. SAVITHA HIREMATH	Ms. D N PADMASHRI Ms. BOOMIKA B Ms. LAYA JAYAKUMAR Ms. REVATHI THAMENDRAN Mr. YOJESH S	4,000.00
351.	49S_BE_6509	INNOVATIVE HEALTHCARE TECHNOLOGY AI-BASED SMART BAND FOR ASTHMA PATIENT HEALTH MONITORING.	B.E.	COMPUTER SCIENCE AND ENGINEERING	Prof. KAVYASHREE I PATTAN	Mr. MOHITH R Mr. YISHWAS C REDDY Mr. V SAI HEMANTH REDDY	4,000.00
352.	49S_BE_0538	AI AUDITOR: FAIRNESS, ROBUSTNESS AND HALUCINATION	B.E.	COMPUTER SCIENCE AND ENGINEERING (DATA SCIENCE)	Prof. MONISH Prof. MITHUN	Ms. MAHI GUPTA Mr. VINURAJ VAMSHI Mr. KRITIK VASAN	3,500.00
353.	49S_BE_3579	A HYBRID QUANTUM-TRANSFORMER FRAMEWORK FOR SEVERITY GRADING AND ANALYSIS OF FETAL HEART ABNORMALITIES IN ULTRASOUND IMAGES	B.E.	ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING	Dr. VINUTHA N	Ms. NISHAT N SHAHU Ms. KASALAN BHARANA Ms. LAKSHYA U REDDY Ms. TANYA GOPAL	3,500.00

KARNATAKA STATE COUNCIL FOR SCIENCE AND TECHNOLOGY
 Indian Institute of Science Campus, Bengaluru – 560 012
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49th series of Student Project Programme (SPP): 2025-26
 List of Student Project Proposals Approved for Sponsorship

354.	49S_BE_3090	INTELLIGENT AUSCULTATION SYSTEM WITH EDGE-DEPLOYED DEEP LEARNING FOR HEART MURMUR CLASSIFICATION	B.E.	ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING	Dr. VINUTHA N Prof. PRADEEP KUMAR K	Ms. DEEKSHITHA M Mr. UTPAL KUMAR Ms. GAJATRI GOVINDA SETTY Ms. KARA SWATHI	4,000.00
355.	49S_BE_5769	ENHANCING LEGAL ACCESSIBILITY FOR INDIAN CASE LAW RETRIEVAL	B.E.	ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING	Dr. SUGANDHA SAXENA Dr. S. V. K. R. RAJESWARI	Ms. POOJAN P Ms. IN NANJINI Ms. BATHASTHA G D Ms. SAHANA PRIYA G	4,000.00

Mr. Azeem Gundwan (ENG23CS0027), Mr. Akash R (ENG23CS0014), Mr. Akash N (ENG23CS0013), Mr. Amogh B Googal (ENG23CS0019), Mr. Bhuvanraj (ENG23CS0036), Mr. Chetankumar M (ENG23CS0046), Mr. Abhishek GB (ENG23CS0005), Mr. Vinith S (ENG23CS0221), Mr. Girish Gouda (ENG23CS0068), Mr. G. Nithesh (ENG23CS0066), Mr. Tejas S (ENG23CS0209), and Mr. Tharun Kumar P (ENG23CS0211), 3rd year CSE students, as Team Dynamo 11, emerged victorious in the Sagar Cricket Cup 2026 – SOE Cricket League on 3rd March 2026.



The poster features the Dayananda Sagar University logo on the left and the Dynamo 11 team logo on the right. The central text reads "Sagar Cricket Cup 2026" in a large, bold font, followed by "SOE Inter Branch Competition" and "Organized by Dept. of Physical Education and Sports". Below this is a photograph of the Dynamo 11 team posing on a cricket field with their trophy. At the bottom, it says "CHAMPIONS!!!!" and "DYNAMO 11 (CAPTAIN ABRAHAM AKASH)".



Mr. Darshan Nagendra (ENG24CS0388), Mr. Lenoie Jesnil Coutinho (ENG24CS0503), 2nd year CSE students has a team Synapse Members are participated and showed outstanding performance in the 24-hour Internal Hackathon (La Casa De Code) Techflix Season-2, secured First Place with cash prize of Rs. 10000 organized by Department of CSEACM-Dayananda Sagar University on 27th–28th February 2026.



Mr. Nithin Katariya V (ENG24CS0151), Mr. Nithin KS (ENG24CS0150), Mr. Narasimha (ENG24CS0140), and Mr. Nihar (ENG24CS0146), 2nd year CSE students has a team Ctrl+Alt+Delete! participated in RIFT 2026 and was selected among the Top 500 teams for the finals out of 8000+ participating teams during 19th and 20th February 2026 at PW Institute of Innovation Bengaluru.



Ms. Asha Suresh Kodad (ENG22CS0025), Ms. Spoorti C K (ENG22CS0184), Ms. Sunitha T G (ENG22CS0193), and Ms. Vaishnavi N M (ENG22CS0202), final year CSE students, along with Dr. RenukaDevi M N, Assistant Professor, and Dr. Revathi V, Associate Professor, Department of CSE, published an Indian patent titled “An Augmented Reality-Based Three-Dimensional Brain Visualization System for Automated Segmentation, Classification, and Interactive Rendering of Ischemic and Hemorrhagic Stroke Regions from Computed Tomography Images.” The patent was filed under the applicant name DSU with application number 202641024991 on 13th March 2026.

(12) PATENT APPLICATION PUBLICATION	(21) Application No.202641024991 A
(19) INDIA	
(22) Date of filing of Application :03/03/2026	(43) Publication Date : 13/03/2026
(54) Title of the invention : An Augmented Reality-Based Three-Dimensional Brain Visualization System for Automated Segmentation, Classification, and Interactive Rendering of Ischemic and Hemorrhagic Stroke Regions from Computed Tomography Images	
(51) International classification	(71)Name of Applicant : 1)Dayananda Sagar University Address of Applicant :Dr. RenukaDevi M N Assistant Professor, Department of Computer Science and Engineering Dayananda Sagar university, Bengaluru south India renukadevi.m-cse@dsu.edu.in 9916554904 Bengaluru South Karnataka India
(31) Priority Document No	(72)Name of Inventor :
(32) Priority Date	1)Dr. RenukaDevi M N
(33) Name of priority country	2)Dr. Revathi V
(86) International Application No	3)Dr. Naresh Nikhil
Filing Date	4)Dr. Roopa H N
(87) International Publication No	5)Asha S K
(61) Patent of Addition to Application Number	6)Spoorti C K
Filing Date	7)Sunitha T G
(62) Divisional to Application Number	8)Vaishnavi N M
Filing Date	9)Dr. Santosh Kumar J
(57) Abstract :	
The present invention discloses an augmented reality-based three-dimensional brain visualization system for automated segmentation, classification, and interactive display of ischemic and hemorrhagic stroke regions from computed tomography images. The system comprises image acquisition, preprocessing, deep learning-based segmentation using a U-Net architecture, stroke classification, volumetric reconstruction using surface extraction algorithms, color-coded mapping, and augmented reality rendering using ARCore or ARKit frameworks. Segmented stroke regions are reconstructed into three-dimensional models and displayed in augmented reality space with distinct color differentiation for ischemic and hemorrhagic regions. The system enables interactive manipulation, measurement, and annotation while generating automated diagnostic reports. The invention improves diagnostic accuracy, reduces interpretation time, enhances spatial understanding, and supports medical education and telemedicine applications.	
No. of Pages : 21 No. of Claims : 8	

Ms. Tavva Tejaswini Reddy (ENG22CS0479), Mr. Suhaib Yasir Bhosge (ENG22CS0189), Mr. Sunilakumar (ENG22CS0192), and Mr. Syed Fuzail Rubbani (ENG22CS0476), final year CSE students, along with Dr. Revathi V, Associate Professor, and Dr. RenukaDevi M N, Assistant Professor, Department of CSE, published an Indian patent titled “System and Method for Generating and Immersive Visualization of the 3D Perfusion Maps for Ischemic Stroke Assessment Using Artificial Intelligence and Augmented/Virtual Reality.”

The patent was filed under the applicant name DSU with application number 202641025134 on 13th March 2026.

(12) PATENT APPLICATION PUBLICATION	(21) Application No.202641025134 A
(19) INDIA	
(22) Date of filing of Application :03/03/2026	(43) Publication Date : 13/03/2026
(54) Title of the invention : System and Method for Generating and Immersive Visualization of the 3D Perfusion Maps for Ischemic Stroke Assessment Using Artificial Intelligence and Augmented/Virtual Reality	
(51) International classification	:G06T 7/00, A61B 6/03, A61B 6/00, G06N 3/08, G06N 3/04
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No	:
Filing Date	:01/01/1900
(87) International Publication No	:NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA
(71)Name of Applicant :	1)Dayananda Sagar University Address of Applicant :Dr. Revathi V Associate Professor, Department of Computer Science and Engineering Dayananda Sagar university, Bengaluru south India revathi-cse@dsu.edu.in 8870017467 Bengaluru South Karnataka India
(72)Name of Inventor :	1)Dr. Revathi V 2)Dr. RenukaDevi M N 3)Dr. Naresh Nikhil 4)Dr. Roopa H N 5)Syed Fuzail Rubbani 6)Suhaib yasir bhosge 7)Sunil Kumar chavhan 8)TAVVA TEJASWINI REDDY 9)Dr.Santosh Kumar J
(57) Abstract :	The invention discloses a computer-implemented system and a method for enhanced ischemic stroke assessment that predicts volumetric perfusion parameter maps—specifically cerebral blood flow (CBF), cerebral blood volume (CBV), and mean transit time (MTT)—directly from non-contrast structural biomedical images, such as non-contrast computed tomography (NCCT), diffusion-weighted imaging (DWI), and apparent diffusion coefficient (ADC) maps. A custom 3D U-Net deep learning architecture, featuring 3×3×3 convolutions, Instance Normalization, Leaky Re LU activations, skip connections, and strided down sampling, processes the input volumes to generate the high-fidelity, multi-channel perfusion predictions without requiring contrast-enhanced dynamic scanning. The predicted volumetric maps undergo post-processing, including thresholding for infarct core (e.g., CBF 30% contralateral mean) and penumbra identification via CBF–ADC mismatch criteria, followed by mesh generation using marching cubes and smoothing for a renderable 3D geometry. These models are seamlessly integrated into an immersive augmented reality (AR) and virtual reality (VR) environment built with Unity 3D and the XR Interaction Toolkit, supporting real-time six-degrees-of-freedom interaction, arbitrary plane slicing, parameter-specific colour overlays, and dynamic visualization of hemodynamic patterns. No. of Pages : 17 No. of Claims : 8

Ms. Yashodha H R (ENG24CS0284), 2nd year CSE student has published an Indian patent with the titled “An IoT-Enabled Autonomous Medicine Dispensing Kiosk with RFID Smart Health Card and AI-Assisted Telemedicine for Underserved Communities” under the applicant name DSU with the application number 202641028045 during 20th March 2026.

(12) PATENT APPLICATION PUBLICATION	(21) Application No.202641028045 A
(19) INDIA	
(22) Date of filing of Application :10/03/2026	(43) Publication Date : 20/03/2026
(54) Title of the invention : An IoT-Enabled Autonomous Medicine Dispensing Kiosk with RFID Smart Health Card and AI-Assisted Telemedicine for Underserved Communities	
(51) International classification	G16H 20/13, G16H 40/67, A61J 7/04, G06Q 50/22, G07F 17/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No	:
Filing Date	:01/01/1900
(87) International Publication No	:NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA
(71)Name of Applicant :	1)Dayananda Sagar University Address of Applicant :Associate Professor, Department of Computer Science and Technology, Dayananda Sagar University Bengaluru South 562112 Bengaluru South Karnataka India
(72)Name of Inventor :	1)Pragathi A B 2)Yashodha H R 3)Shreyas R 4)Tejavarshini 5)Khushi N J 6)Dr. Santosh Kumar J 7)Dr. Shahina Parveen M 8)Dr. Hemachandra Reddy 9)Dr. Sudha D 10)Dr. Ramandeep Kaur
(57) Abstract :	<p>The present invention discloses Swasthya 24/7—a solar-powered, IoT-enabled, autonomous medicine dispensing kiosk integrated with a Hospital-Connected Cloud Prescription Database, a Cloud-Integrated RFID Smart Health Card system, and an AI-assisted Proximity-Triggered Ambient Voice Guidance system. The invention is conceived to permanently resolve the critical last-mile healthcare access deficit experienced by rural, tribal, semi-urban, and underserved communities across India and other developing nations, where pharmacies, qualified pharmacists, and healthcare facilities are either absent, geographically inaccessible, or unavailable outside business hours. The Swasthya 24/7 operates continuously — 24 hours a day, 365 days a year — without requiring a full-time pharmacist or continuous internet connectivity. When a patient visits any partnered hospital or PHC, the attending doctor uploads their prescription directly into the Swasthya 24/7 Cloud Health Database. Each registered patient is then issued an RFID Smart Health Card that, upon authentication at any kiosk nationwide, instantly retrieves their live encrypted medical profile — including all hospital-uploaded prescriptions, chronic illness records, dosage histories, allergy data, and refill eligibility — without the patient carrying any paper document. A core accessibility innovation is the Proximity-Triggered Ambient AI Voice Guidance System: when a person enters within 2–5 metres of the kiosk, the AI automatically begins narrating step-by-step instructions in the local regional language — guiding even a completely illiterate, first-time user through the entire medicine collection process without any touch input required to begin, analogous to metro rail public announcement systems that continuously guide passengers before they reach their destination. The kiosk then permits dispensing of only prescription-approved medicines, generates real-time drug interaction alerts via voice and visual interfaces, and maintains a tamper-evident dispensing audit log. The system is powered by a 300W solar panel array with 150Ah battery backup, ensuring uninterrupted operation during power outages. A mechanical carousel-based automated dispensing mechanism, controlled by servo motors interfaced with a Raspberry Pi 4 microcontroller, executes medicine release with precision. Payments are supported via cash, UPL debit/credit card, and Aadhaar Pay — ensuring access for all users regardless of digital literacy or banking status. An emergency override module enables authorized PHC doctors to remotely grant access to critical medicines. The invention is scalable across Primary Health Centres, Panchayat offices, rural schools, border posts, tribal welfare centres, and remote geographies globally.</p> <p>No. of Pages : 19 No. of Claims : 10</p>

Mr. Dhairyamansinh Jadeja (ENG24CS0400), 2nd year CSE student and Prof. Archana R C, Assistant Professor, Department of CSE presented a paper titled "Energy Efficient TinyML Models for Intelligent Wearable Devices" and received Best Paper Award at ICONIC 2026 (International Conference On Intelligent Computing) held at Panimalar Engineering College, Chennai on 27th & 28th March 2026.



Ms. P N Bhoomika (ENG24CS0155), Ms. Sonia N (ENG24CS0238) , Mr. Navnith Krishna G (ENG24CS0546), Mr. Rochan R Kulkarni (ENG24CS0187), 2nd year CSE students and Prof. Archana R C, Assistant Professor, Department of CSE presented a paper titled "Explainable AI-Based Financial Market Prediction Using Ensemble Machine Learning and Temporal Data Analytics" and received Best Paper Award at ICONIC 2026 (International Conference On Intelligent Computing) held at Panimalar Engineering College, Chennai on 27th & 28th March 2026.



Ms. Sanjana R G (ENG24CS0204), Ms. Rahila M S (ENG24CS0176), Mr. Mahammed Zain (ENG25CS1011), Mr. Nawaz Ahmed(ENG24CS0144), 2nd year CSE students and Prof. Archana R C, Assistant Professor, Department of CSE presented a paper titled "Next-Generation AI-Powered Border Security Framework Using Multi-Model Surveillance and Intelligent Threat Detection" and received Best Paper Award at ICONIC 2026 (International Conference On Intelligent Computing) held at Panimalar Engineering College, Chennai on 27th & 28th March 2026.



Team Pseudocoders achieved an outstanding milestone by securing the 2nd Runner-Up position along with a cash prize of ₹5,000 at Hackanova, held on 27th February at NMKRV College for Women. The team worked on the problem statement “Disaster Response Optimization” and proposed an innovative solution titled ResQNet. The team was led by Z Barkath Nisha (ENG23CS0235), along with members Ranjith Kumar G (ENG24AM0073), Shareng S (ENG23AM0275), Abburi Manasa (ENG23CS0240), and Yashmitha P (ENG23CS0230).



Mr. R. Sujay, an 8th Semester student of CSE (AI & ML), presented his research paper titled “Theoretical Intensification and Computational Proof of Quantum Interrogation: The Elitzur–Vaidman Protocol” at the Students’ Symposium SPECTRA ’26, held at RV University on 27th February 2026. His presentation focused on the concept of the Elitzur–Vaidman Bomb Tester and its computational validation, showcasing an in-depth understanding of quantum interrogation techniques and their theoretical foundations.



Pritam Wani (ENG23AM0262), 6th Semester CSE (AI&ML), Sai Krishna (ENG23DS0083), Mahedharan SRS (ENG25CS0586), Raghav Talwaria (ENG25CS0129), Abubakar Zibran Shsbir Shaik G (ENG24AM0126), and Kailasnath R (ENG24CS0091) secured the Runner-Up position in DSU Athelon – Chess, conducted on 27th February by the Department of Sports, DSU. The event witnessed participation from various college teams, making this achievement truly commendable. The team later advanced to the South Zone level in the same month and secured a position among the Top 40 teams, marking a significant milestone and an opportunity to compete at the national level.



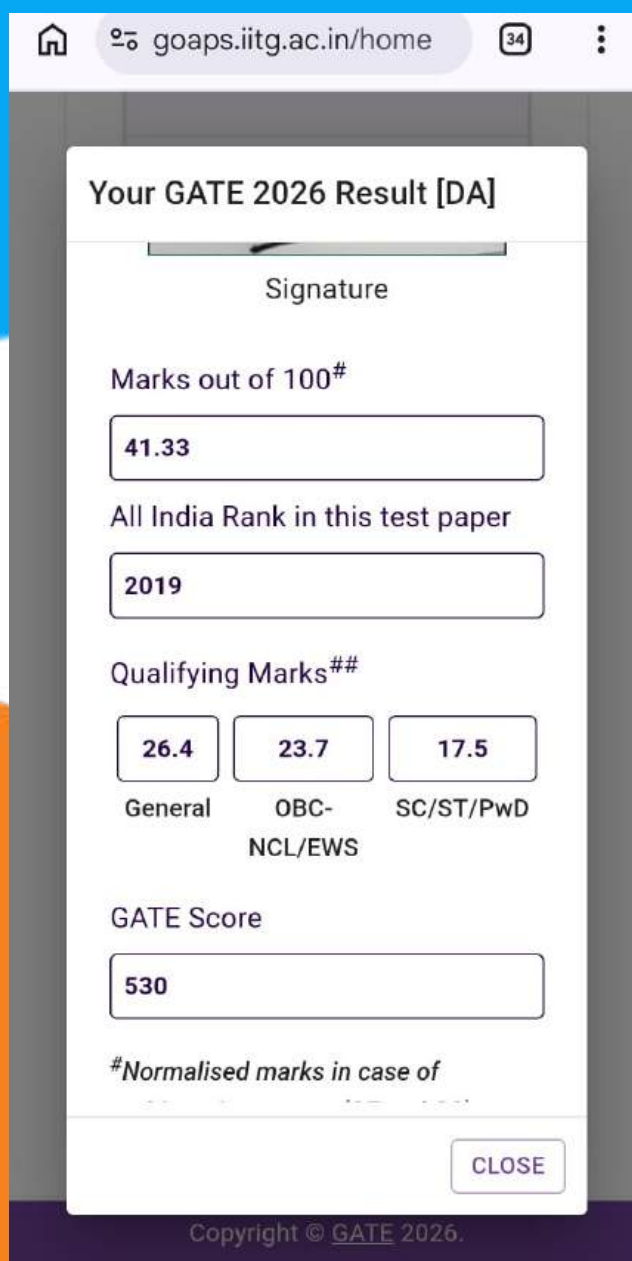
Jayesh R L (ENG23AM0175), Rajath U (ENG23AM0061), and Sanjana B S (ENG23AM0068), 6th Semester CSE (AI & ML) students, secured the First Runner-Up position in the 24-hour Internal Hackathon TechFlix Season 2, conducted on 27–28 February by the ACM Club of CSE, DSU. The event witnessed participation from over 70 teams (nearly 200 students), making this achievement truly commendable. The team has also been selected for the National Hackathon Finals of TechFlix, marking a significant milestone and an opportunity to compete at the national level.



A research paper titled “Machine Learning Techniques for Voice-Based Parkinson’s Disease Detection”, co-authored by Ms. Nishvika Teja Reddy, Ms. Niharika N, Ms. Jayashree K R, Ms. J. Pallavi, Dr. Abdul Haq Nalband, Associate Professor, CSE (AI&ML) and Prof. Trupthi Rao, Assistant Professor, CSE (AI&ML) has been presented at the 4th IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI-2026). The conference, organized by IEEE MP Section and ABV-IIITM Gwalior, was held from 12th to 14th March 2026. The research focuses on leveraging machine learning techniques for early detection of Parkinson’s disease using voice data, contributing to advancements in AI-driven healthcare diagnostics. This accomplishment highlights the institution’s strong emphasis on interdisciplinary research and innovation addressing real-world challenges.



Arko Chakraborty, 8th Semester student of CSE (AI & ML), has secured an impressive All India Rank of 2019 in the GATE 2026 examination. He successfully cleared the Data Science and Artificial Intelligence (DA) stream, marking a remarkable academic achievement. His consistent dedication, strong technical skills, and sustained hard work throughout his academic journey from 1st to 8th semester have truly paid off. This accomplishment brings great pride to the entire department and serves as an inspiration to fellow students.



CSE (AI & ML) 6th semester students—Claudia Raj, Smruthi Chandrashekar, Prachi Patel, Sanjana B S, Rajath U, Aditya S Hegde, Jayesh RL, Rishabh R Soraganvi, Manyashree D, Vandana Kumari Meena, and Anshu Kumari—along with 4th semester students Mohamed Mateen Ahmed, Poorvi G Reddy, and Vachanadeepthi G, attended the Indiaspora Forum 2026 Global AI Summit held at JW Marriott Hotel Bengaluru on 25th March 2026.

The summit featured sessions by industry leaders including R. Ray Wang (Constellation Research), who spoke on emerging AI careers; Neeraj Aggarwal (Boston Consulting Group), who discussed AI's impact on jobs in India; and Mohandas Pai (Infosys), who shared insights on the evolving tech ecosystem and Bengaluru vs Hyderabad as tech hubs.

Dr. Jayavrinda Vrindavanam V, Professor & Chairperson, CSE (AI & ML), also attended, encouraging student engagement. The event provided valuable exposure to industry trends, career opportunities, and advancements in Artificial Intelligence.



Mr. Akshat Agarwal (ENG22AM0072), an 8th Semester student of CSE (AI & ML), received the Best Paper Award for his paper titled “Syn-SWIFT: A High-Fidelity, Explainable Synthetic SWIFT Dataset for Benchmarking Federated Fraud Classifiers”, presented at the International Conference on Sustainable Management and Advanced Research Technologies, held on 27–28 March 2026. The conference was organized by Rajarambapu Institute of Technology. His work was guided by Dr. Bahubali Shiragapur, Professor, CSE (AI & ML). The research focuses on developing a high-fidelity and explainable synthetic dataset for benchmarking federated fraud detection models, contributing to advancements in secure and reliable AI systems.

The certificate is titled "Best Paper Award" in a cursive font. It certifies that Mr./Ms. Akshat Agarwal is awarded the Best Paper titled "Syn-SWIFT: A High-Fidelity, Explainable Synthetic SWIFT Dataset for Benchmarking Federated Fraud Classifiers" (Paper ID: 404) at the International Conference on Sustainable Management and Advanced Research Technologies, held from March 27-28, 2026. The conference was organized by Kasegaon Education Society's Rajarambapu Institute of Technology, Maharashtra, India, and is associated with RG Consultancy Services Pvt. Ltd., India. The certificate features logos for Rajarambapu Institute of Technology (RIT), AIP, TBSU Publications, PES, Maharashtra State Innovation Society, NETRARIT FOUNDATION, and Scopus. It also includes a vertical banner on the right side that reads "IC-SMART 2026". At the bottom, there are four signatures and names: Dr. Ruchi Goyal (Director, RGCS), Dr. R. G. Desavale (Organizing Secretary), Dr. Vijay H. Kalmani (Convenor), and Dr. P. V. Kadole (Director, RIT). A small illustration of a hand holding a globe with a plant growing from it is on the left side.

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Best Paper Award

This is to Certify that

Mr./Ms. Akshat Agarwal

is proudly awarded with the Best Paper titled

“Syn-SWIFT: A High-Fidelity, Explainable Synthetic SWIFT Dataset for Benchmarking Federated Fraud Classifiers” (Paper ID: 404)

in the

International Conference on Sustainable Management and Advanced Research Technologies
March 27-28, 2026

Organized By
Kasegaon Education Society's
Rajarambapu Institute of Technology, Maharashtra, India
NAAC A+ Graded Empowered Autonomous Institute

In Association with
RG Consultancy Services Pvt. Ltd., India

Ruchi Goyal
Dr. Ruchi Goyal
Director, RGCS

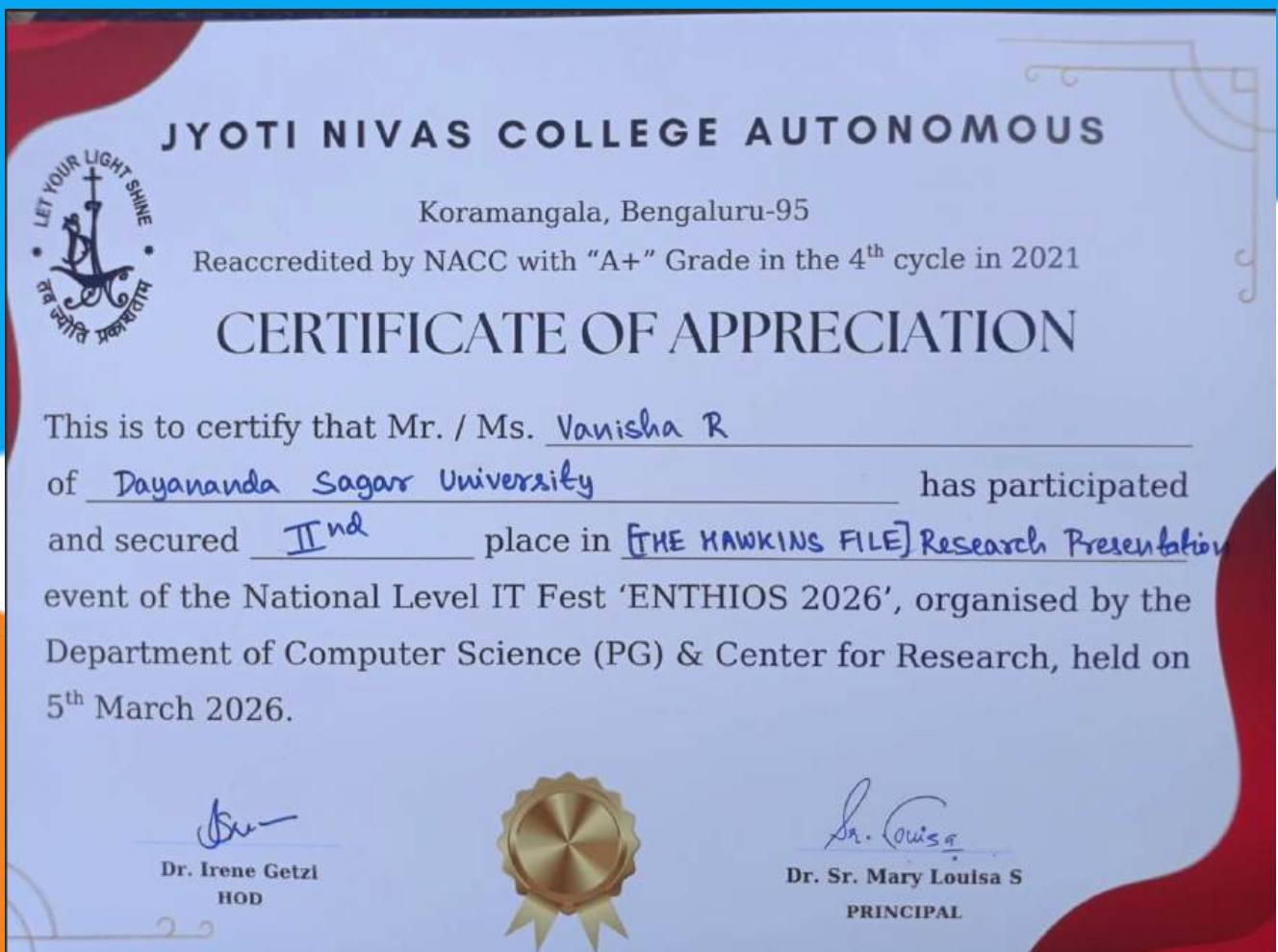
R. G. Desavale
Dr. R. G. Desavale
Organizing Secretary

Vijay H. Kalmani
Dr. Vijay H. Kalmani
Convenor

P. V. Kadole
Dr. P. V. Kadole
Director, RIT

IC-SMART 2026

Ms. Vanisha R, Dayananda Sagar University, secured 2nd place in “The Hawkins File” Research Presentation at the National Level IT Fest ‘ENTHIOS 2026’. The event was organized by Jyoti Nivas College Autonomous, Bengaluru, on March 5, 2026, showcasing excellence in research and innovation.





Khushi N J (ENG24CT0008) and Pragathi A B (ENG24CT0015), students of the Department of Computer Science and Technology, contributed to a patent titled “An IoT-Enabled Autonomous Medicine Dispensing Kiosk with RFID Smart Health Card and AI-Assisted Telemedicine,” filed on 10th March 2026 and published on 20th March 2026.

The innovation, Swasthya 24/7, is an IoT-enabled smart Medi ATM designed to provide 24/7 access to medicines and basic healthcare in rural and underserved areas, supporting accessible and technology-driven healthcare delivery.

(12) PATENT APPLICATION PUBLICATION	(21) Application No.202641028045 A
(19) INDIA	
(22) Date of filing of Application :10/03/2026	(43) Publication Date : 20/03/2026
(54) Title of the invention : An IoT-Enabled Autonomous Medicine Dispensing Kiosk with RFID Smart Health Card and AI-Assisted Telemedicine for Underserved Communities	
(51) International classification	(71)Name of Applicant : 1)Dayananda Sagar University Address of Applicant :Associate Professor, Department of Computer Science and Technology, Dayananda Sagar University Bengaluru South 562112 Bengaluru South Karnataka India
(31) Priority Document No	(72)Name of Inventor : 1)Pragathi A B 2)Yashodha H R 3)Srirayas R 4)Tejowarshini 5)Khushi N J 6)Dr. Santosh Kumar J 7)Dr. Shashina Parvson M 8)Dr. Hemachandra Reddy 9)Dr. Sudha D 10)Dr. Ramananddeep Kaur
(32) Priority Date	
(33) Name of priority country	
(86) International Application No	
Filing Date	
(87) International Publication No	
(61) Patent of Addition to Application Number	
Filing Date	
(62) Divisional to Application Number	
Filing Date	
(57) Abstract The present invention discloses Swasthya 24/7— a solar-powered, IoT-enabled, autonomous medicine dispensing kiosk integrated with a Hospital-Connected Cloud Prescription Database, a Cloud-Integrated RFID Smart Health Card system, and an AI-assisted Proximity-Triggered Ambient Voice Guidance system. The invention is conceived to permanently resolve the critical last-mile healthcare access deficit experienced by rural, tribal, semi-urban, and underserved communities across India and other developing nations, where pharmacies, qualified pharmacists, and healthcare facilities are either absent, geographically inaccessible, or unavailable outside business hours. The Swasthya 24/7 operates continuously — 24 hours a day, 365 days a year — without requiring a full-time pharmacist or continuous internet connectivity. When a patient visits any partnered hospital or PHC, the attending doctor uploads their prescription directly into the Swasthya 24/7 Cloud Health Database. Each registered patient is then issued an RFID Smart Health Card that, upon authentication at any kiosk nationwide, instantly retrieves their live encrypted medical profile — including all hospital-uploaded prescriptions, chronic illness records, dosage histories, allergy data, and refill eligibility — without the patient carrying any paper document. A core accessibility innovation is the Proximity-Triggered Ambient AI Voice Guidance System: when a person enters within 2–5 metres of the kiosk, the AI automatically begins narrating step-by-step instructions in the local regional language — guiding even a completely illiterate, first-time user through the entire medicine collection process without any touch input required to begin, analogous to metro rail public announcement systems that continuously guide passengers before they reach their destination. The kiosk then permits dispensing of only prescription-approved medicines, generates real-time drug interaction alerts via voice and visual interfaces, and maintains a tamper-evident dispensing audit log. The system is powered by a 300W solar panel array with 150Ah battery backup, ensuring uninterrupted operation during power outages. A mechanical carousel-based automated dispensing mechanism, controlled by servo motors interfaced with a Raspberry Pi 4 microcontroller, executes medicine release with precision. Payments are supported via cash, UPI, debit/credit card, and Aadhaar Pay — ensuring access for all users regardless of digital literacy or banking status. An emergency override module enables authorized PHC doctors to remotely grant access to critical medicines. The invention is scalable across Primary Health Centres, Panchayat offices, rural schools, border posts, tribal welfare centres, and remote geographies globally. No. of Pages : 19 No. of Claims : 10	



D. Shivaramkrishna successfully completed an internship with WAYEVA Innovations in the field of Web Development from 16th January to 16th March 2026. During the internship, he demonstrated commendable sincerity, diligence, and a strong commitment to learning, earning recognition for his valuable contributions and potential in the technology domain.



INTERNSHIP CERTIFICATE

THIS CERTIFICATE IS PROUDLY PRESENTED TO

D shivaramkrishna

This is to certify that **D shivaramkrishna** as successfully completed an internship with **WAYEVA INNOVATIONS** in the Program of **WEB DEVELOPMENT** from **JANUARY 16th 2026** to **MARCH 16th 2026**. His performance was commendable, and his efforts were found to be sincere and diligent.

Ramyasri
Ramyasri
CO-ORDINATOR



Vignesh K
Vignesh.K
HEAD OF THE OPERATIONS



D. Shivaramkrishna actively participated in the INNOVISION Ideathon, organized by the Department of Computer Science and Engineering (AI & DS) on 5th March 2026.

The event provided a platform to showcase innovative ideas and problem-solving skills, encouraging creativity and collaborative thinking among participants.



Students from the Department of Computer Science and Technology actively participated in the NASSCOM Technology & Leadership Forum 2026, gaining valuable exposure to a premier national-level platform with strong industry presence.

The experience provided insights into emerging technologies, industry trends, and professional networking opportunities, contributing significantly to their academic enrichment and career development.



Mr. Agrim Sanjeev Kaushal, a student of the Department of Computer Science and Technology, Dayananda Sagar University, attended Knowledge Workshop 1 and Knowledge Workshop 2 of Inno Manthan 2026, organized by FKCCI in collaboration with the Government of Karnataka, on 16th and 17th March 2026.

The workshops provided valuable insights into innovation, entrepreneurship, and industry-driven practices, contributing to enhanced learning and professional exposure.



Department of Higher Education
Department of Collegiate and
Technical Education, GoK



"Bharat Ratna"
Sir M. Visvesvaraya
Founder, FKCCI



Estd. 1916
Federation of Karnataka
Chambers of
Commerce & Industry

CERTIFICATE OF PARTICIPATION



This is to certify that Mr. / Ms. **Agrim Sanjeev Kaushal**, student of **Dayananda Sagar University**, attended Knowledge Workshop 1 and Knowledge Workshop 2 of Inno Manthan 2026, organised by FKCCI in collaboration with Government of Karnataka, on 16th and 17th March 2026.

Uma Reddy
President, FKCCI



CA. Shrvan Guduthur
Chairman, Manthan 2026, FKCCI

Brahma Pruthvi (CST), Praful (CS), Vara Prasad G K (CS), Tejas (AI & DS), and Saqib Khan (CS) presented a research paper titled “Multimodal Transformer-Based Architecture for Early Cancer Detection and Survival Prediction” at the International Conference on Intelligent Computing (ICONIC 2K26) held at Panimalar Engineering College, Chennai, on 28th March 2026.

The research proposes an advanced AI-driven model that integrates multimodal data to detect cancer at early stages and predict survival outcomes. By identifying complex patterns beyond human analytical capability, the model serves as a decision-support tool for medical professionals, contributing to improved healthcare diagnostics.



Samrudh (ENG24CT0016), Srajan (ENG24CT0020), Varun B S (ENG24CT0024), and Rajath S D (ENG25CT1001), students of the Department of Computer Science and Technology, contributed to a patent titled “Arc Drive – A Microcontroller-Based Secure Data Storage System.”

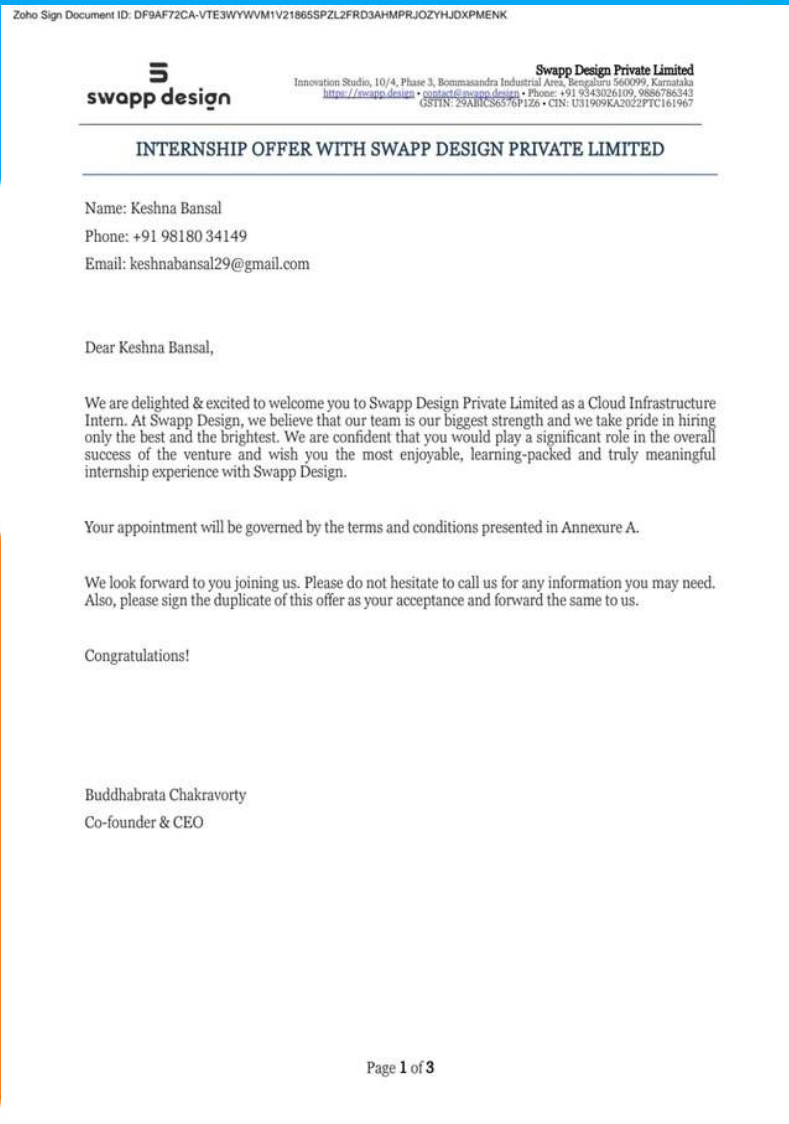
The innovation focuses on active data protection by integrating real-time monitoring, access control, and threat detection to prevent unauthorized access, data theft, and malware intrusion. Designed as an intelligent security layer, the system enables secure data handling both at rest and during active use.

The team also presented their project at the RUAS Startup Mela held on 25th and 26th March 2026, gaining valuable exposure and feedback toward real-world implementation.



Keshna Bansal has been selected as a Cloud Infrastructure Intern at Swapp Design Private Limited.

This opportunity marks a significant step in gaining industry experience in cloud technologies and infrastructure, contributing to professional growth and skill development.



FLIGHT'26 AEROEXPO 2026 organised by Madras Institute of Technology.

The VI semester students from the Department of Aerospace Engineering, Dayananda Sagar University—Ms. Nisha Rani (ENG23AS0006), Ms. Rakshitha (ENG23AS0013), Ms. Shafli (ENG23AS0035), Ms. Ridhima Jain (ENG23AS0014), Ms. Sneha (ENG23AS0037), and Mr. Krishna Ramani (ENG23AS0033)—actively participated in an Avionics Workshop conducted as part of the national-level technical symposium Flight'26.

The symposium was organized in association with the Department of Aeronautical Engineering at the Madras Institute of Technology (MIT) Campus, Anna University, on 21st March 2026. The workshop provided students with valuable hands-on exposure to avionics systems, enhancing their understanding of aircraft instrumentation, communication, and control systems. Their participation reflects the department's emphasis on experiential learning and continuous skill development in emerging aerospace domains.



Participation in CII IN SPACE Conclave

The Students from the Department of Aerospace Engineering, Dayananda Sagar University, were provided with a valuable opportunity to present their CanSat project journey at the CII and IN-SPACE Conclave.

The project was carried out under the guidance of Dr. Prashantha Kumar H, Associate Professor, Department of Aerospace Engineering, whose mentorship played a pivotal role in the team's success. The team members—Mr. Krish Agarwal (ENG22AS0031), Ms. Khyati Choubey (ENG22AS0030), Ms. Srilaxmi Shenoy (ENG22AS0041), and Mr. Pramath Gopal Bhat (ENG22EC0091)—demonstrated commendable dedication and technical expertise in successfully showcasing their work.

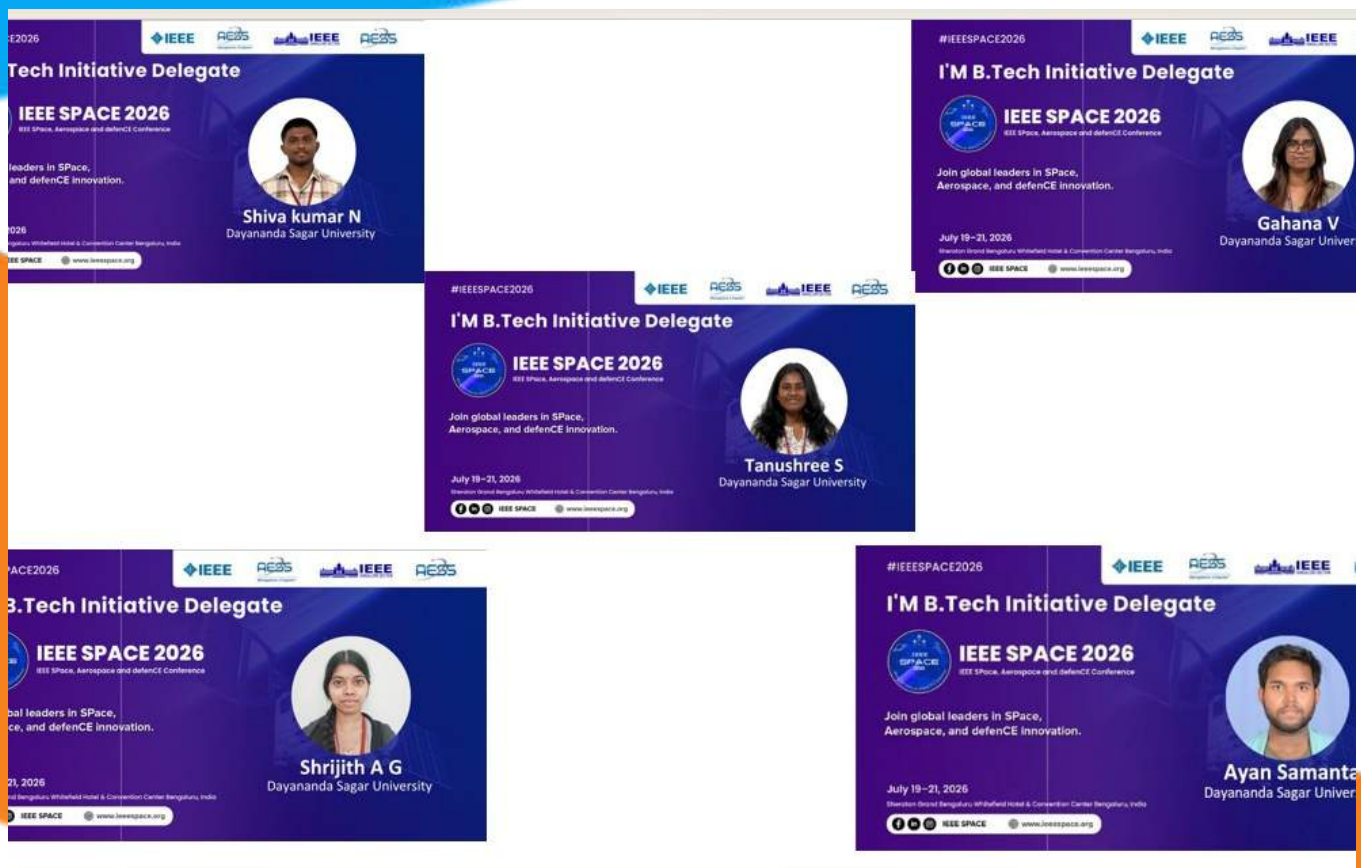
The conclave offered invaluable insights into India's emerging NewSpace economy and highlighted the significance of collaborative innovation. This enriching experience has strengthened the students' understanding of the space sector ecosystem and inspired them to pursue innovation-driven careers in aerospace and space technology.



IEEE SPACE 2026 Delegates under BTECH Initiative of Space 2026

The Students from the Department of Aerospace Engineering, Dayananda Sagar University—Ms. Tanushree (ENG23AS0020), Ms. Shrijitha (ENG23AS0019), Ms. Gahana V (ENG23AS0047), Mr. Shivakumar (ENG24AS1001), and Mr. Ayan Samantha (ENG23AS0041)—have been selected to represent Dayananda Sagar University as delegates under the B.Tech Initiative of SPACE 2026 at the prestigious IEEE SPACE 2026 Conference.

The conference is scheduled to be held from 19th to 21st July 2026 at Sheraton Grand Bengaluru. This opportunity provides students with an excellent platform to engage with industry experts, researchers, and academicians, thereby enhancing their exposure to advancements in space technology and fostering professional networking. Their selection is a testament to their academic excellence and the department's commitment to nurturing talent in the aerospace domain.



Flight Fury Competition at IIT Roorkee

The students from the VI semester of the Department of Aerospace Engineering, Dayananda Sagar University—Ms. Tanushree (ENG23AS0020), Ms. Yashaswini U (ENG23AS0040), Ms. Gahana V (ENG23AS0047), Mr. Shivakumar (ENG24AS1001), and Mr. Vijaykumar AN (ENG24AS1002)—actively participated in the RC Plane Aircraft Design and Piloting Competition held at IIT Roorkee from 13th to 15th March 2026.

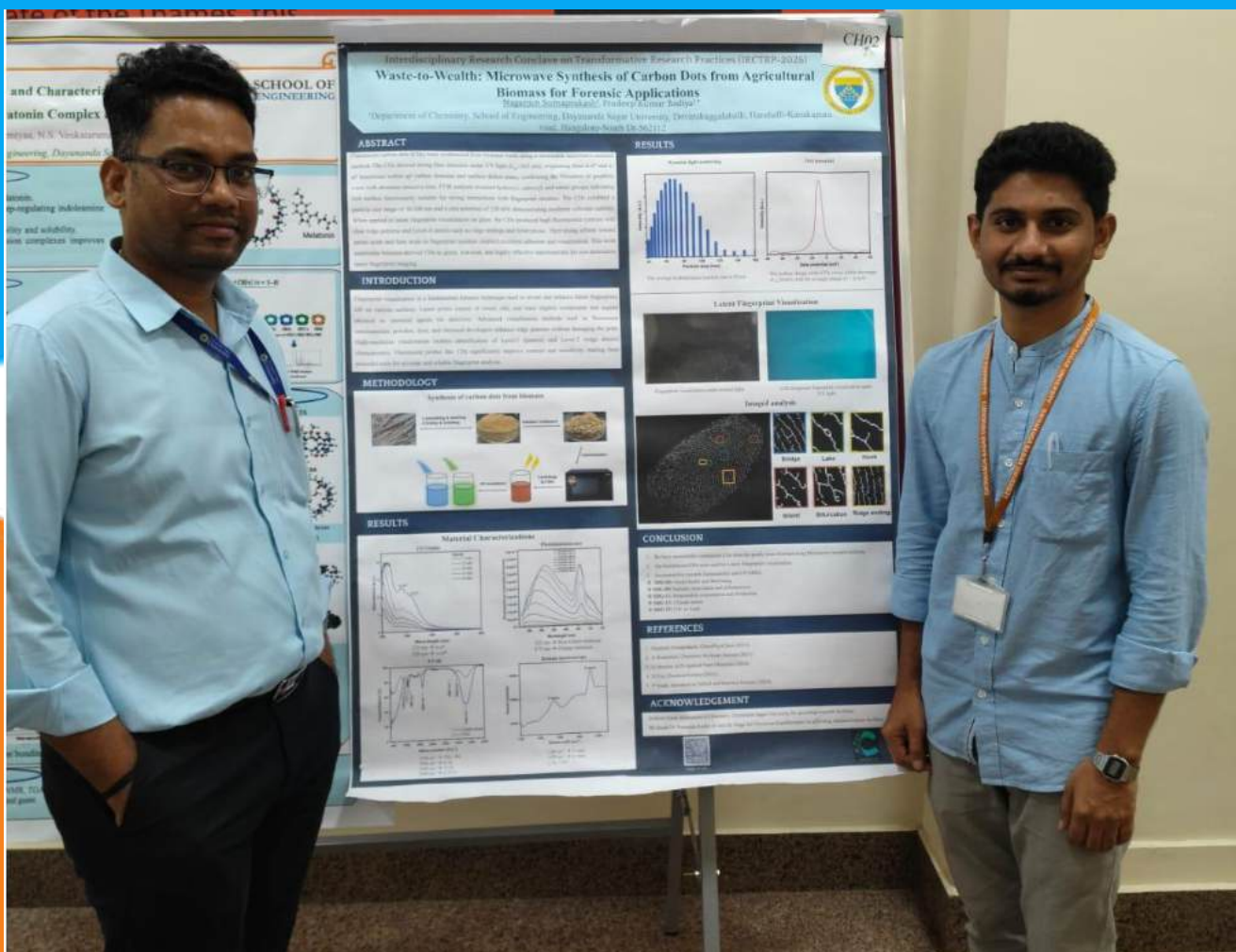
Their participation showcased strong technical aptitude, teamwork, and hands-on skills in aircraft design and flight operations. The competition provided valuable exposure to real-world aeromodeling challenges, enhancing their practical understanding of aerodynamics, control, and system integration. Such engagements reflect the department's commitment to encouraging experiential learning and fostering innovation among students.



Mr. Nagarjun Somaprakash [ENG24PFBS01], Research scholar Under Dr. Pradeep Kumar Badiya, Assistant professor, Department of Chemistry, School of Engineering, Dayananda Sagar University, attended the Interdisciplinary Research Conclave on Transformative Research Practices (IRCTRP - 2026) organized by Interdisciplinary Cell (INSPIRE - DSU) at Dayananda Sagar University on 27th February. The purpose of attending the conference was to gain interdisciplinary exposure and understand how different scientific domains integrate to address complex research challenges. The conclave provided insights into collaborative approaches that combine chemistry, materials science, environmental sustainability, and advanced analytical methodologies. During the conference, Mr. Nagarjun Somaprakash presented a poster titled “Waste-to-wealth: Microwave Synthesis of Carbon Dots from Agricultural Biomass for Forensic Applications”, which received positive feedback and constructive suggestions from researchers and faculty members. The event offered valuable opportunities for interdisciplinary networking, exchange of ideas, and understanding emerging research trends beyond conventional disciplinary boundaries. The CARBONIX group sincerely appreciates the organizers of IRCTRP - 2026 for conducting the conference and making the experience enriching and productive.



Mr. Nagarjun Somaprakash [ENG24PFBS01], Research scholar Under Dr. Pradeep Kumar Badiya, Assistant professor, Department of Chemistry, School of Engineering, Dayananda Sagar University, attended quantum materials for future information technology organized by Dayananda Sagar University on 27th and 28th February. The purpose of attending the conference was to gain knowledge on quantum materials for various applications in materials science, environmental sustainability, and advanced analytical methodologies. During the conference, Mr. Nagarjun Somaprakash presented a poster titled “Waste-to-wealth: Microwave Synthesis of Carbon Dots from Agricultural Biomass for Forensic Applications”, which received positive feedback and best poster award in research scholar category. The CARBONIX group express sincerely gratitude to the organizers for conducting the conference and making the experience enriching and productive.



Rahul D Seervi from the Department of Artificial Intelligence and Robotics, Dayananda Sagar University, successfully participated in Eurekathon 3.0, a 24-hour hackathon organized by the Department of Computer Science and Technology at DSU-SOE, Harohalli, on 19–20 February 2026.

He demonstrated strong technical skills, creativity, and problem-solving abilities while working on real-world challenges. His participation highlights the university's focus on innovation, hands-on learning, and preparing students for emerging technological challenges.



Sanjay Ram M from the Department of Artificial Intelligence and Robotics, Dayananda Sagar University, successfully participated in Eurekaathon 3.0, a 24-hour hackathon organized by the Department of Computer Science and Technology at DSU-SOE, Harohalli, on 19–20 February 2026.

He showcased strong creativity, teamwork, and problem-solving skills while working on real-world challenges. His participation reflects the university's emphasis on experiential learning, innovation, and preparing students for emerging technological advancements.



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