Volume-3 Issue-11

Dayananda Sagar
is backed by a
Seven-Decade
Legacy
in Education & Healthcare

SCHOOL OF ENGINEERING

SOE-BULLETIN

The Official Newsletter of **School of Engineering**

NOVEMBER 2025

www.dsu.edu.in

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.

INDEX

SCHOOL OF
ENGINEERING

INTERNATIONAL ACTIVITIES

“Malaysia Visit for MoU Signing Ceremony and Workshop Conduction- MAHSA University”

The two-day visit to MAHSA University, Malaysia, on November 20–21, 2025, was a significant international collaboration initiative by the Department of CSE (AI&ML) of the SoE at DSU. DSU served as the Co-Academic Partner for the MAHSA International Conference on Industrial Revolution Information & Communication Technology (Mi-IRICT-2025). The primary purpose was to explore academic collaborations, conduct a pre-conference workshop, participate in the conference, and formalise the partnership through an MOU Signing Ceremony, aligning with SDG 4 (Quality Education), SDG 9 (Industry, Innovation and Infrastructure), and SDG 17 (Partnership for the Goals). The DSU Delegation members present included Dr Puttamadappa, Dr Supriya Mathew, Dr Udaya Kumar Reddy, Dr Jayavrinda Vrindavanam, Dr Princy Randhawa, and Mr Nitesh Naik, who were met by MAHSA Officials, including Prof. Emeritus Dato' Ikram Ismail (Vice Chancellor), Professor Emeritus Dr Rosnah Binti Mohd Zain (Deputy Vice-Chancellor), Audrey Yong, Ts. Vickneswari Durairajah, Ir. Ts. Suria Prakkash Vijayasuria, Dr Sadiq Batcha Abdul Rahim, Kasirajan Kasipandian, and Shanthi Muniandy. The event included a pre-conference workshop titled “How to Boost Academic Research using AnswerThis” delivered by the DSU team on November 20th, attended by around 30 participants, the Keynote Address by Dr. Udaya Kumar Reddy at the Mi-IRICT-2025 inaugural session, student paper presentations, a lab tour, and the successful MOU signing ceremony that formalized collaboration in joint research, student/faculty exchange, and academic events.


BRASSERIE

“Malaysia Visit for Collaboration and Workshop Conduction- INTI University”

The visit to INTI International University, Malaysia, on November 19, 2025, was an international outreach initiative by the Department of CSE - AI&ML of the SoE at DSU. The primary purpose was to explore academic collaborations, conduct a faculty workshop, and strengthen global academic partnerships, aligning with SDG 4 (Quality Education), SDG 9 (Industry, Innovation and Infrastructure), and SDG 17 (Partnership for the Goals). The DSU Delegation members present included Dr. Puttamadappa, Dr. Supriya Mathew, Dr. Udaya Kumar Reddy, Dr. Jayavrinda Vrindavanam, Dr. Princy Randhawa, and Mr. Nitesh Naik, who were met by INTI Officials, including Dr. Malathy, Professor Dr. Asokan Vasudevan, and Mr. Kumaresan Krishnasamy. The event included a formal welcome, presentations on both universities, a lab tour, and discussions on potential joint academic events, research, credit transfer, and student exchange/internship opportunities. The visit culminated in a post-lunch workshop titled “How to Boost Academic Research Using AnswerThis” delivered by the DSU team to approximately 80 participants (students, faculty, and research scholars), which included interactive demonstrations and a quiz, resulting in a request from INTI for a follow-up online session in January.

“Malaysia Visit for Collaboration and Workshop Conduction- University of Malaya”

The visit to the University of Malaya (UM), Kuala Lumpur, on November 22, 2025, was part of the ongoing international academic initiative by the Department of CSE (AI&ML), SoE, DSU. The primary objectives were to understand UM's research ecosystem, explore collaboration in engineering and AI/ML, and initiate the MOU process for a long-term partnership, aligning with SDG 4 (Quality Education), SDG 9 (Industry, Innovation and Infrastructure), and SDG 17 (Partnership for the Goals). The DSU Delegation members present included Dr. Udaya Kumar Reddy, Dr. Jayavrinda Vrindavanam, Dr. Princy Randhawa, and Mr. Nitesh Naik, who were met by UM Official Professor Harikrishnan Ramiah. The visit included a warm welcome, a detailed lab tour showcasing innovation and computational research facilities, productive discussions on joint events, student exchange, and research proposals, with UM expressing strong interest in initiating the MOU process and connecting DSU with their International Affairs and Computer Science teams. The engagement featured a Workshop on “How to Boost Academic Research using AnswerThis”, delivered by the DSU team to around 25 participants (students and research scholars), which focused on improving research skills and was well-received.

“Malaysia Visit for Collaboration- Sunway University”

The visit to Sunway University, Malaysia, on November 21, 2025, was an initiative by the Department of Computer Science & Engineering (Artificial Intelligence and Machine Learning) of the School of Engineering at Dayananda Sagar University (DSU) to expand international academic partnerships and explore collaboration opportunities in research, innovation, and student mobility. The primary objectives included understanding Sunway’s research ecosystem, discussing joint research projects, student credit exchange, and exploring research-based project opportunities with stipends for DSU students. The engagement aimed to align with SDG 4 (Quality Education), SDG 9 (Industry, Innovation and Infrastructure), and SDG 17 (Partnership for the Goals). The DSU Delegation members present were Dr. Jayavrinda Vrindavanam, Dr. Princy Randhawa, and Mr. Nitesh Naik, who were welcomed by Dr. Kalidasan Balasubramaniam, Lecturer from the Faculty of Engineering and Technology, Sunway University. The visit included a discussion on Sunway's strong QS ranking, a tour of their innovation labs and research facilities, an explanation of the stipend opportunities for research students (Master’s research assistantship of 3,000 Ringgit/month for one year and 10,000 Ringgit/year for PhD students), and an agreement to start joint events immediately, such as workshops and seminars.

Expert Lecture on “Smart Sensors for a Smarter Planet How Robotics, Healthcare & Renewable Energy are Shaping the Future”

On 25 November 2025, from 11:00 AM to 12:30 PM at Lecture Hall 1 (LH01), Dayananda Sagar University, the Department of Artificial Intelligence and Robotics Engineering, in association with the Department of CSE (AI & DS), School of Engineering, organized a technical expert lecture titled “Smart Sensors for a Smarter Planet – How Robotics, Healthcare & Renewable Energy are Shaping the Future.” The session was delivered by Prof. Radhakrishna Prabhu, a leading researcher in smart sensors and instrumentation and Professor at the Robotics & Autonomous Systems Research Group, Robert Gordon University, Aberdeen, UK. The lecture introduced students to the fundamentals and cutting-edge advancements in mechanical, chemical, biological, and fibre-optic sensors, emphasizing how smart sensors form the core intelligence behind modern systems in robotics, healthcare, automation, autonomous vehicles, and renewable energy. Prof. Prabhu discussed real-world applications, including medical robots, MRI-compatible surgical systems, smart cities, and optimized solar and wind energy management, and connected sensor innovation with global sustainability goals, particularly SDG 7 and SDG 9. The talk encouraged project-based learning and inspired students to pursue sensor-driven research while opening avenues for global collaboration and applied research. The event concluded with an interactive Q&A session that strengthened participants’ understanding of emerging technological challenges and opportunities.


Smart Sensors for a Smarter Planet:
How Robotics, Healthcare & Renewable Energy are Shaping the Future
Prof. Radhakrishna Prabhu
MDMC


Tech Entrepreneurship
"ITS BETTER TO BE A PIRATE THAN TO JOIN THE NAVY"
STEVE JOBS
GPS Map Camera
Ramanagara, Karnataka, India
Harohalli, Ramanagara, Karnataka 562112, India
Lat 12.662437, Long 77.450372
Tuesday, 25/11/2025 11:22 AM GMT+05:30
Note : Captured by GPS Map Camera


School of Computing, Engineering and Technology
SOCET


Ramanagara, Karnataka, India

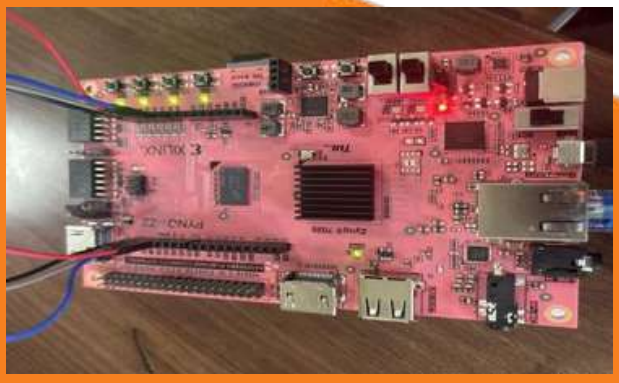

Ramanagara, Karnataka, India

SCHOOL OF
ENGINEERING

WORKSHOPS / SKILL DEVELOPMENT PROGRAMS

Workshop Report on “Development of Algorithms on AI Edge Devices & VLSI Design”

From November 5th to 7th, 2025, the Department of Artificial Intelligence & Robotics conducted a three-day hands-on workshop at Lecture Hall 2, Harohalli Campus, focusing on AI edge-device algorithms and VLSI design. The sessions were led by Mr. Katikila Pradeep (Day 1 & 2) and Dr. Pramod Kumar Naik (Day 3), guiding participants through FPGA architecture, Zynq SoCs, synthesis and timing analysis, and edge-AI deployment using the Xilinx Kria KV260, PYNQ boards, and Vivado Design Suite. Students learned the full code-to-hardware workflow, including smart-camera deployment, Linux-based configuration, and Python-driven hardware acceleration via Jupyter. On the final day, the workshop transitioned to transistor-level design with Microwind, where students built and simulated CMOS gates, analysing timing and layout verification. By the end of the program, participants gained practical experience spanning RTL implementation to basic GDSII concepts, strengthening their expertise in modern FPGA design, embedded AI workflows, and VLSI logic fundamentals.



Hands-on Training Program on “Industrial Hydraulics & Pneumatics”

From 12 to 13 November 2025, the Department of AI & Robotics, in collaboration with the Bosch Rexroth Centre of Competence for Industrial Automation Technologies, conducted a hands-on training program on Industrial Hydraulics and Pneumatics for 5th-semester students. Led by Dr. K. Sudha Deepthi and Dr. Puneeth, the sessions introduced students to hydraulic and pneumatic components, circuit design, electro-pneumatic and electro-hydraulic control, and essential safety practices. Through live demonstrations and practical exercises, students learned to design, assemble, test, and troubleshoot fluid power systems used in robotics and automation. The training effectively bridged classroom theory with real industrial applications, strengthening technical skills, enhancing project and internship readiness, and contributing to the department’s industry-oriented learning ecosystem.

5 DAYS VALUE-ADDED PROGRAM ON “PRODUCT DEVELOPMENT USING EMERGING TECHNOLOGIES”

The Department of CSE (Data Science) at Dayananda Sagar University, in association with NexusIQ Solutions, recently organized a five-day Value-Added Program (VAC) on “Product Development Using Emerging Technologies.” It was delivered by Mr. Chaganti Sai Ram, CTO, NexusIQ Solutions, Telangana. The program was conducted from 17th November to 21st November, 2025, exclusively for the 5th and 7th Semester B.Tech (Data Science) students. A total of 120 students actively participated in the program. The event, held from November 17th -21^{st,} 2025, was headed by Dr. Shaila S G, Professor and Chairperson, along with Dr. Suresh Arumugam, Associate Professor, Prof. Godhandaraman T, Assistant Professor, Prof. Sindhu A, Assistant Professor, and Prof. Mithun, Assistant Professor from the same department. The VAC was coordinated under the leadership of the Department of CSE (Data Science), with sessions delivered by industry experts from NexusIQ. The primary aim of this program was to expose students to real-world product development workflows and equip them with the skills needed to build AI-powered applications by integrating Generative AI, LLMs, and modern deployment platforms

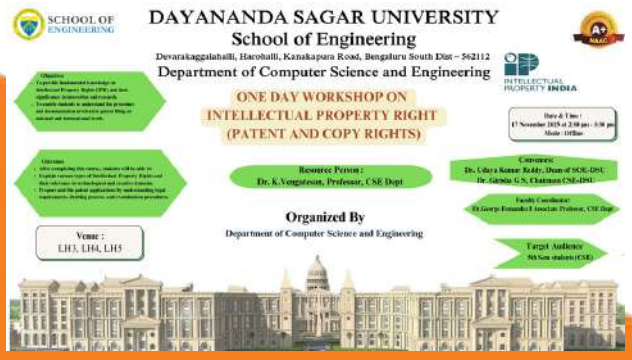
One Day Workshop on “XR Technologies”

The Department of Computer Science & Engineering and the Department of Aerospace Engineering at Dayananda Sagar University jointly organized a one-day workshop on XR Technologies on 27/11/2025 at LH-2. Centered on the theme “XR Technologies: Shaping the Future of Engineering Education and Industry,” the workshop introduced students to emerging immersive technologies such as AR, VR, MR, and Metaverse platforms that are reshaping the engineering world. The event aimed to enhance participants' understanding of next-generation digital tools that play a vital role in aerospace, manufacturing, and modern computing applications. The expert session was delivered by Mr. Prahlad Sarnad, XR Leader and Industrial Metaverse Expert at Tech Mahindra, who shared his deep expertise in AR/VR/MR solutions, digital transformation, and industrial metaverse engineering, and even well as internship opportunities. They demonstrated the usage of Flight simulation. The workshop was coordinated by Dr. Nagaraja SR, Dr. Girisha GS, Dr. BVN Ramakumar, Dr. J. Sebastian Nixon, Dr. Mathew, and Dr. George Fernandez I, whose collaborative efforts ensured the smooth conduct of the program. The event witnessed enthusiastic participation from students and faculty, concluding with valuable discussions on the future potential of XR technologies in education, research, and industry advancements.


Date: 27/11/25, Venue: LH - 2, Timings: 10:30 AM onwards

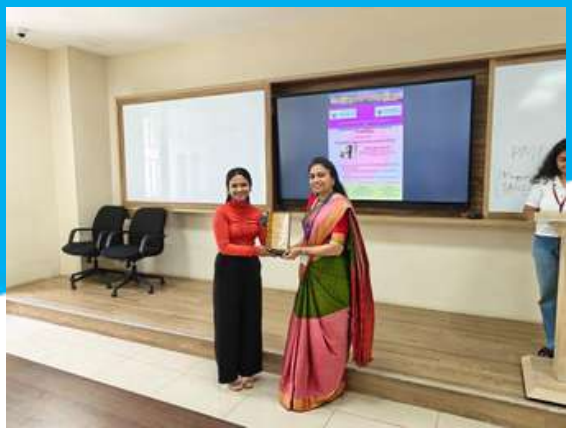
One Day Workshop on “Intellectual Property Rights (Patent and Copyrights)”

The Department of Computer Science and Engineering organized a One-Day Workshop on Intellectual Property Rights (Patent and Copyrights) on 17 November 2025 with the objective of equipping 5th-semester CSE students with essential knowledge on IPR and its growing importance in the fields of innovation, research, and technology development. The workshop aimed to familiarize participants with different types of intellectual property, their relevance, and the protection they offer to both technological innovations and creative works. It also focused on introducing the procedural aspects of patent filing at both national and international levels, thereby promoting awareness of the legal frameworks governing intellectual property. The session was delivered by Dr. K. Vengatesan, Professor, CSE Department, who provided in-depth insights into patent drafting, legal prerequisites, documentation, and examination procedures. Students gained practical understanding of how to prepare and file patent applications, and the interactive discussions enhanced their conceptual clarity on copyrights, patents, and related rights. The workshop was coordinated by Dr. George Fernandez, Associate Professor, CSE Department, whose efforts ensured the smooth and effective conduct of the event. Overall, the workshop successfully strengthened students’ knowledge of IPR and encouraged them to pursue innovation with awareness of legal protection mechanisms.



Placement Training on “Current Industry Trends”

The Department of Computer Science and Technology, Dayananda Sagar University, successfully conducted an insightful Placement Training on Current Industry Trends on 10th November 2025. The session was led by Ms. Shruthi K. Murthy, Partnership Head at WILA and Industry Speaker with expertise in AI/ML, Data Science, Data Analytics, and Cybersecurity. Students gained valuable exposure to the latest technological developments, industry expectations, and employability-enhancing strategies that will help them prepare effectively for future placements. We extend our heartfelt thanks to Ms. Shruthi K. Murthy for sharing her expertise and motivating our students with real-world insights into the evolving tech landscape. The session was highly interactive, engaging, and appreciated by students for its relevance to current placement trends in the IT industry.

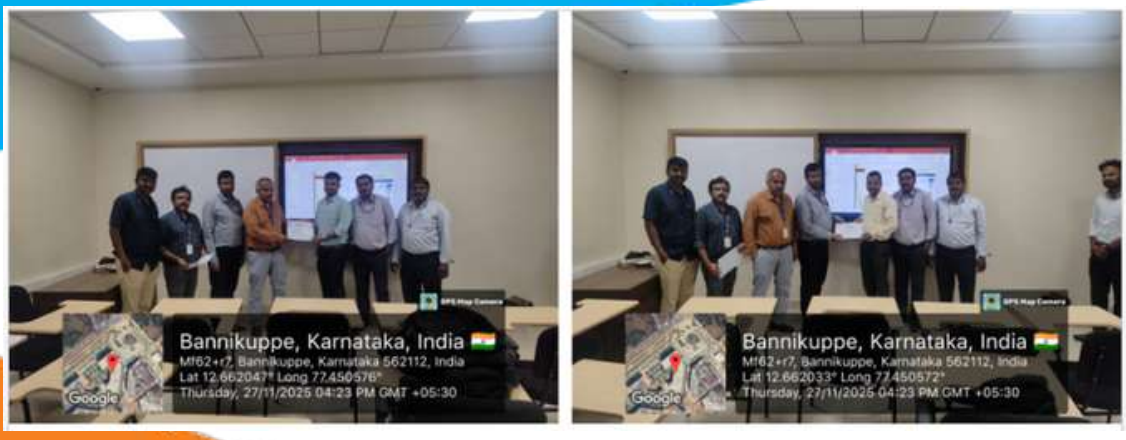


Innovative Interfaces Hands on workshop in "UI/UX Design"

The Department of Computer Science & Engineering, Dayananda Sagar University, organized "Innovative Interfaces Hands on workshop in UI/UX Design" for 3rd semester students. The workshop focused on empowering students with industry-relevant skills that enhance creativity, problem-solving abilities, and design thinking—skills essential for today's competitive digital ecosystem. The workshop was conducted by experienced professionals Mr. Abhishek S. M, Head of Design and Design Mentor at Designboat UI/UX School. With his extensive industry experience, he guided students through the fundamentals of UI/UX design and provided valuable insights into current trends and best practices.The workshop featured live demonstrations, interactive activities, and guided exercises, enabling students to understand the end-to-end design process—from user research and wireframing to visual design and usability considerations. Participants had the opportunity to engage in hands-on tasks that mirrored real-world design scenarios, helping them gain confidence in applying UI/UX concepts practically. The workshop successfully helped learners bridge the gap between theory and practice while inspiring them to explore career opportunities in the field of UI/UX design.

“A two-day Corporate Training Program on Lean Manufacturing Techniques”

A two-day Corporate Training Program on Lean Manufacturing Techniques for M/s Bühler India employees was held on 26–27 November 2025 at the Bosch Rexroth Innovation Lab, Dayananda Sagar University. The sessions, delivered by Dr. Shashidhara L. C., Dr. Viswanathan R., Prof. Karthik S. B., and Dr. Lokendra Singh, covered key Lean concepts including waste elimination, value stream mapping, 5S, Kaizen, Heijunka, Standard Work, and Lean–Industry 4.0 integration. Participants engaged actively through lectures, demonstrations, and hands-on discussions. The program received positive feedback for linking Lean tools to modern manufacturing needs and reinforcing practical application. It was organized through the office of Mr. Vijay Kumar, Director – Training & Placements, coordinated by Dr. Shashidhar L. C., and overseen by Dr. Saravanabavan D., Chairperson of Mechanical Engineering. Certificates were issued to all attendees, further strengthening DSU’s industry–academia collaboration.



“The Google Gemini Prompt Engineering Workshop”

The Google Gemini Prompt Engineering Workshop, organized by Mohammad Abdul Raheman Gheta with Dr. Pramod Kumar Naik as the Faculty Coordinator, was conducted from 10 to 17 October 2025 in LH-1 for around 600 first-year B.Tech students through distributed, batch-wise sessions. The week-long program introduced students to the multimodal capabilities of the Gemini AI model and trained them in essential prompt-engineering techniques such as specificity, context setting, role assignment, zero-shot and few-shot prompting, and step-by-step reasoning for complex problem solving. The hands-on design allowed students to practice writing effective prompts for code generation, debugging, essay structuring, and simplifying scientific concepts, supported by interactive Q&A segments with goodies for active participation. The workshop resulted in improved AI proficiency, stronger critical thinking, immediate academic impact, and certification for all participants, with highly positive feedback praising the balance of theory, practical application, and engaging delivery.

SCHOOL OF
ENGINEERING

WEBINARS / SEMINARS / TECHNICAL TALKS

“PHINIA Tech Talk: From Automation to Intelligence”

The PHINIA Tech Talk held on 06 November 2025 introduced students to the real-world integration of Artificial Intelligence and Industry 4.0 within modern manufacturing and IT systems, highlighting PHINIA’s commitment to fuel innovation, clean mobility, and sustainable automotive solutions. Led by speakers Matt Logar (VP & CIO), Sumedh Sharangdhar (Senior Developer), and Mei Han Fan (HR Manager), the session explored smart factories, connected systems, real-time analytics, and the shift from basic automation to intelligent, data-driven industrial environments. Students from mechanical, automotive, IT, software, and electronics backgrounds gained valuable insights into global career opportunities, digital transformation, and emerging industry skill requirements. The event also strengthened the university–industry connection and concluded with PHINIA announcing scholarships for around 20 students and internships for 5 students, making the session both informative and impactful.

Seminar on “Role of IPR in Research and Entrepreneurship”

The Department of CSE (AI & DS), School of Engineering, Dayananda Sagar University, conducted a Technical Seminar on “Role of IPR in Research and Entrepreneurship” on 24 November 2025 from 10:30 AM to 12:30 PM in LH01, featuring Dr. Natarajan Venkateswaran, Professor of Practice, as the resource person. The session introduced students to the fundamental concepts of Intellectual Property Rights, emphasized their importance in high-quality research, and addressed the legal and ethical considerations involved in protecting ideas and inventions. Dr. Natarajan explained how IPR supports entrepreneurship, funding opportunities, and innovation-driven ventures, helping students understand patent filing processes and other forms of protectable intellectual property. III-semester CSE (AI & DS) students actively participated, gaining valuable insights into leveraging IPR for research and start-up initiatives. The seminar was coordinated by Dr. Ramesh Wadawadagi, Prof. Nadavadi Harshith Gowd, Prof. Sumy Joseph, and Prof. Mohith Kumar R, under the guidance of Dr. Poongodi T, ensuring smooth execution and academic relevance.

Industry Expert Lecture on “Gateway to the Professional World”

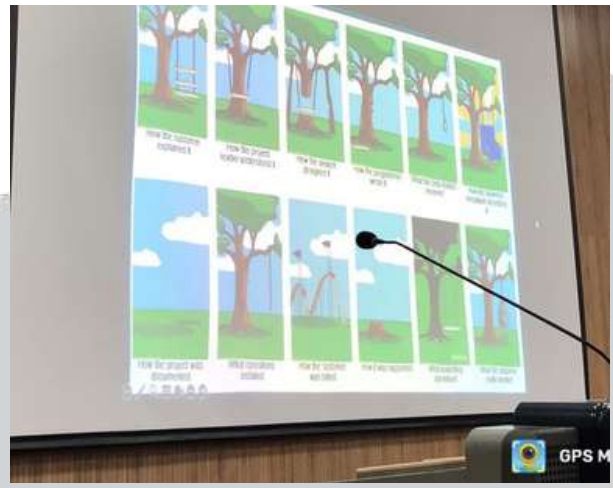
On 13 November 2025, the Department of Aerospace Engineering, Dayananda Sagar University, organized an industry lecture titled “Gateway to the Professional World” by Mr. Vidyasagar Patro. Students and faculty participated enthusiastically and gained valuable insights into professional ethics, industry expectations, workplace readiness, communication skills, and career growth. The session provided a motivating and structured roadmap to help students transition confidently into the professional environment.

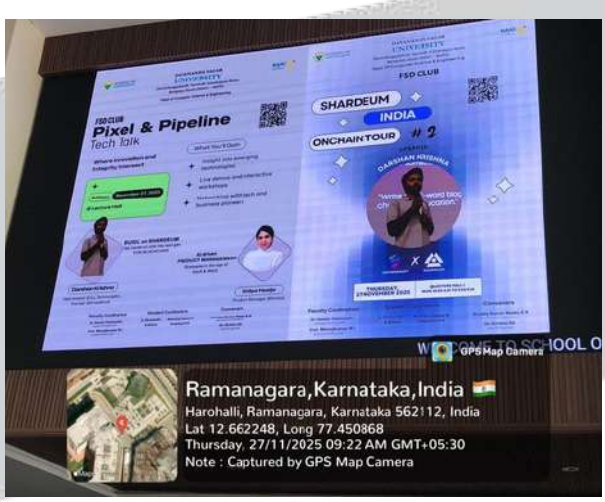
“Alumni Talk ”

The Department of Aerospace Engineering organized an Alumni Talk on 24 November 2025, featuring Mr. Jason, Founder of BOPPL Pvt. Ltd.; Mr. Keerthi Krishna Yadav, Founder of Lumen Aerospace; and Ms. Monika, currently with Collins Aerospace. They addressed the 2nd- and 3rd-year students on topics such as career opportunities, the growing role of AI, and entrepreneurship in the aerospace sector.

Tech Talk on “Pixel & Pipeline”

The Department of Computer Science & Engineering at Dayananda Sagar University organized a tech-focused event titled “Pixel & Pipeline – Tech Talk” under the banner of the FSD Club on November 27, 2025, at 9:00 AM in the Lecture Hall. The event was structured to provide students with insights into emerging technologies, hands-on demos, and interactive workshops. Featuring two impactful sessions—“Build on Shardeum” by Darshan Krishna, Data Analyst at ILL Technologies and founder of Kwackraft, and “AI-driven Product Management” by Shilpa Hasija, Product Manager at Omind—the event successfully bridged the gap between technical innovation and real-world industry practices. Students were introduced to blockchain fundamentals, EVM-based development, AI-driven strategies, and modern SaaS/Web3 product workflows, making the program both enriching and professionally relevant. The event was meticulously coordinated by a dedicated team of faculty and student organizers. The Faculty Coordinators included Dr. Gouthu Thithyethri, Prof. Manohar K N, and Prof. Manjunath N I, who provided academic leadership and guided the planning of the session. The Student Coordinators—S. Shreenidhi, G. Nithesh, Nishchal Gowda R, and Preetham H S—ensured smooth execution, participant engagement, and logistics management. The program was convened under the supervision of Dr. Uday Kumar Reddy K R and Dr. Giridhar S, whose support contributed to the success of the event. The session concluded with enthusiastic participation, valuable industry insights, and networking opportunities with tech and product professionals.




FSD CLUB
Pixel & Pipeline
Tech talk
SHARDEUM
INDIA
ONCHAIN TOUR # 2
GPS Map Camera
Ramanagara,Karnataka,India
Harohalli, Ramanagara, Karnataka 562112, India
Lat 12.662248, Long 77.450868
Thursday, 27/11/2025 09:22 AM GMT+05:30
Note : Captured by GPS Map Camera


GPS Map Camera
Ramanagara,Karnataka,India
Harohalli, Ramanagara, Karnataka 562112, India
Lat 12.662467, Long 77.450581
Thursday, 27/11/2025 11:15 AM GMT+05:30
Note : Captured by GPS Map Camera


SHARDEUM
INDIA
ONCHAIN TOUR # 2
GPS Map Camera
Ramanagara,Karnataka,India
Harohalli, Ramanagara, Karnataka 562112, India
Lat 12.662421, Long 77.450513
Thursday, 27/11/2025 11:18 AM GMT+05:30
Note : Captured by GPS Map Camera


GPS Map Camera
Ramanagara,Karnataka,India
Harohalli, Ramanagara, Karnataka 562112, India
Lat 12.662466, Long 77.450604
Thursday, 27/11/2025 11:15 AM GMT+05:30
Note : Captured by GPS Map Camera


What is Blockchain?
GPS Map Camera
Ramanagara,Karnataka,India
Harohalli, Ramanagara, Karnataka 562112, India
Lat 12.662453, Long 77.450538
Thursday, 27/11/2025 11:29 AM GMT+05:30
Note : Captured by GPS Map Camera

SCHOOL OF
ENGINEERING

EVENTS: PROFESSIONAL SOCIETIES / CLUB ACTIVITIES

“TECHNOCOGNITION’25”

Technocognition’25, a two-day national protothon hosted by the Departments of Electronics & Communication Engineering (ECE) and Aerospace Engineering (ASE), brought together 70 teams and over 210 participants from across India to design and showcase innovative prototypes tackling real-world problems. The event featured distinguished dignitaries, including officials from MSME, DRDO, ISRO, MathWorks, and 3DEXPERIENCE Edu, and opened with registration and a traditional inaugural ceremony followed by addresses from university leadership. A panel discussion set the tone for innovation and entrepreneurship, after which teams engaged in a rigorous 36-hour prototype development sprint involving circuit design, coding, debugging, and system integration, with industry experts reviewing progress on Day 2. Projects were evaluated by an esteemed jury from Tech Mahindra, HEXIA, and Maven Silicon based on innovation, feasibility, documentation, execution, and real-world impact, culminating in awards from a prize pool exceeding ₹3,00,000 along with Maven Silicon course vouchers, certificates, and goodies. The event was convened by senior university leaders, supported by the Organizing Committee and ElectroBlitz volunteers who ensured seamless coordination, ultimately fostering interdisciplinary learning, engineering competence, and a strong culture of innovation at Dayananda Sagar University.


TECHNOCOGNITION'25

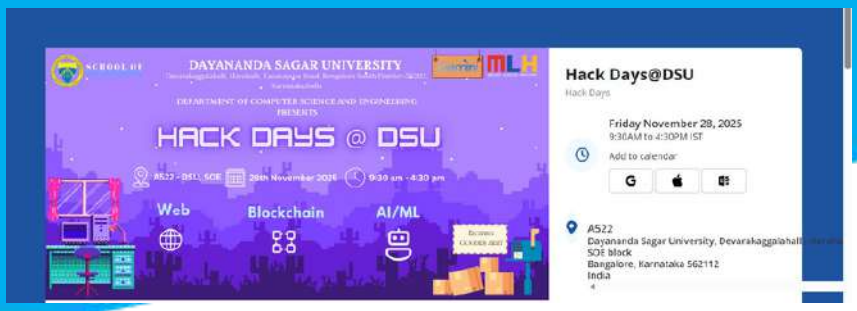

TECHNOCOGNITION'25


TECHNOCOGNITION'25
SPONSORS
$200
WINNER


TECHNOCOGNITION'25
SPONSORS
$200
SECOND RUNNER - UP

“Hack Days”

The CSE Department of DSU, in collaboration with Major League Hacking (MLH), successfully hosted Hack Days @ DSU, an exciting 6-hour mini hackathon that encouraged rapid innovation, teamwork, and hands-on problem-solving. The event was conducted under the guidance of Dr. Bipin Kumar Rai, Professor, CSE, whose support ensured a smooth and engaging experience for all participants. The hackathon concluded with impressive project demos, after which the winning teams were awarded Google Swag Kits, MLH stickers, and other exciting goodies, celebrating their creativity and technical excellence. The Winners were Sneha & Sneha M P, Morugesh & Avula, Jiya Patel & Chinmayi, and Aditya & Jai Shankar.



“Design Thinking Expo”

The Department of Computer Science & Technology successfully organized “THINK. CREATE. INNOVATE – Design Thinking Expo 2025” on 14th November 2025, showcasing the creativity, problem-solving ability, and design thinking skills of B.Tech 3rd semester students. As part of their Design Thinking course, students worked in teams to identify real-world problems and design innovative product solutions. The exo served as a platform for them to present their prototypes, research insights, and user-centric design approaches. A total of 14 teams participated, exhibiting a wide range of creative solutions across domains such as sustainability, healthcare, education, smart living, and digital innovation. The event attracted enthusiastic participation from faculty members, students, and visitors across departments, creating a vibrant atmosphere of learning and collaboration. The expo was inaugurated by the Chief Guest, Mr. Vinod Shankar, CEO of AIC–DSU Foundation, who appreciated the students’ ability to integrate empathy, ideation, prototyping, and testing into a complete design thinking cycle for their final products. The chief guest evaluated the prototypes based on innovation, feasibility, usability, and overall design impact. To recognize exemplary efforts, the department distributed prizes across various levels, celebrating outstanding contributions from students.


Inner


EMPOWERING
SCAMPER

“IoT Project Expo”

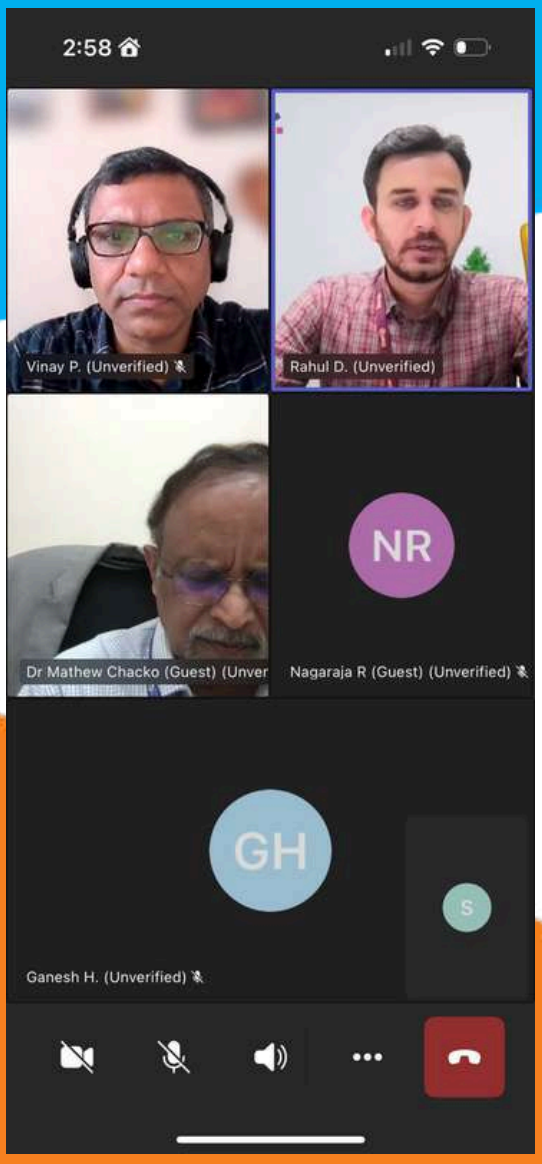
The Department of Computer Science & Engineering at Dayananda Sagar University organized IoT Project Expo to 7th sem on 28 Nov 2025.

“Empowering Minds, Enriching Lives – Mental Health Awareness Session”

The Department of Computer Science and Engineering (Data Science), School of Engineering, Dayananda Sagar University, in association with the DataScience@DSU Club, organized a Mental Health Awareness Session titled “Empowering Minds, Enriching Lives” on 11 November 2025 at LH-3, SOE. It was led by Mr. Vishwesh K, Psychiatric Social Worker, Department of Psychiatry, CDSIMER. The session was conducted from 8:30 AM to 10:30 AM and received active participation from students, faculty members, and student coordinators. The session aimed to create awareness about mental well-being, reduce stigma around mental health conversations, and help students understand the importance of emotional balance during academic and personal challenges. The resource person provided important insights on stress management, emotional resilience, early signs of psychological distress, and practical coping mechanisms. The event offered a safe and supportive environment for open conversations on mental health.

“Proposal for collaboration in MBSE between Dayananda Sagar university and Quest Global”

Dr. Mattew Chacko, Professor of Practice in the Department of Aerospace Engineering, proposed a collaboration in Model-Based Systems Engineering (MBSE) between Dayananda Sagar University and Quest Global, with a focus on skill-development programs, project-based learning, knowledge exchange, and opportunities for internships and placements for Aerospace Engineering students. In this regard, an online meeting was conducted on 25 November 2025 with the Quest Global technical team, led by Mr. Vinay P, who heads the MBSE capability initiative at Quest Global.



“Bangalore University Collaboration Conclave (NBUC) 2025 at Nokia Bell Labs”

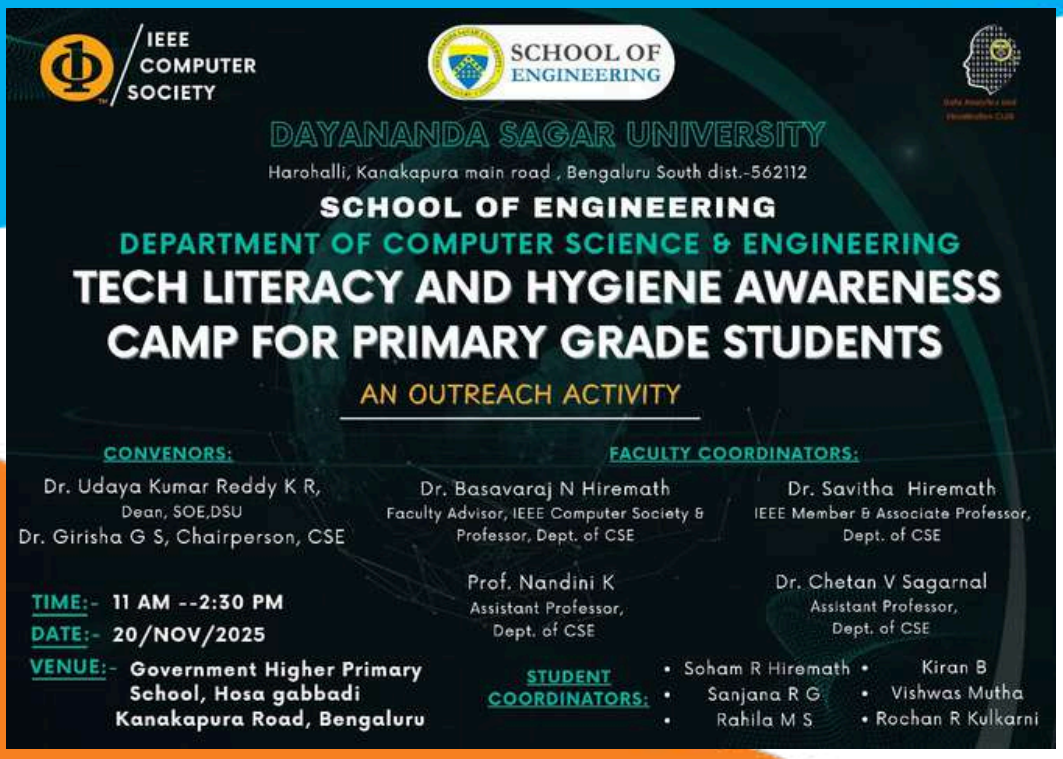
The Department of Computer Science & Engineering, SoE, Dayananda Sagar University be a part in “The Nokia Bell Labs – Bangalore University Collaboration Conclave (NBUC) 2025” was held on 3rd November, 2025 at Nokia Bell Labs, Bengaluru, bringing together students, researchers, and innovators from various universities to present cutting-edge projects in the fields of Artificial Intelligence, Edge Computing, and Embedded Systems. The conclave served as a platform for showcasing innovative ideas, fostering collaboration between academia and industry, and promoting hands-on problem-solving through real-world challenges. Along with Dr. Sivananda Reddy, Prof. Santhosh M, and the 7th Sem students (SAMEER KATTE, S G SUMANTH, SATWIK KASHYAP, and SHAIK FAHAD) have participated in this. The 7th Semester CSE students of Dayananda Sagar University emerged as winners of the “Best Implemented Industry Project” award for their outstanding work on the Next-Gen TinyML Smart Weather Station Challenge. The project demonstrated the integration of TinyML and Edge Computing to develop a compact, energy-efficient weather monitoring system powered by a 6KB AI model running entirely on microcontroller boards. This innovation reflects a significant step toward sustainable and intelligent edge-based solutions for real-world applications.

“Women Empowerment, Child Development and Educational Awareness”

The NSS volunteers of the Dayananda Sagar University, Data Science Department, conducted a community outreach initiative on 7th November 2025, focusing on Women Empowerment, Child Development, and Educational Awareness. The programme covered three villages: Linganapura, Konasandra, and Bannikuppe. The initiative involved enthusiastic participation from around 200 students representing three sections, along with support from dedicated 5th-semester volunteers. The programme was guided and supervised by faculty members Dr. Santhosh Kumar G, Dr. U Pavan Kumar, Prof. Prapti Bhattacharjee, and Prof. Kishor Malakar, whose leadership ensured effective coordination and smooth execution of all activities.

Outreach Activity on “Tech Literacy and Hygiene Awareness Camp for Primary Grade Students”

The Department of Computer Science & Engineering, SoE, Dayananda Sagar University, was a part of the outreach activity “Tech Literacy and Hygiene Awareness Camp for Primary Grade Students” on 20 Nov 2025. Outreach initiative organized by the Department of Computer Science & Engineering in association with the IEEE Computer Society and the Data Analytics and Visualization Club. Tech Literacy and Hygiene Awareness Camp for Primary Grade Students aimed at introducing young learners to basic technology concepts while also promoting essential hygiene practices through engaging activities and fun learning sessions for the Primary grade students. Extend gratitude to Chairperson, Dr. Girisha G S, Dept of CSE, Dr. Revathi, and Dr. Basavaraj N Hiremath Sir for their guidance and support throughout the event.




Dayananda Sagar University
GPS Map Camera
Ramanagara, Karnataka, India
Dayananda Sagara Mdc, Karnataka 562112, India,
Ramanagara, Karnataka 562112, India
Lat 12.66311° Long 77.450764°
Thursday, 20/11/2025 10:33 AM GMT +05:30
Google

“Mega Blood Donation Drive 2025”

The Department of Student Affairs, in collaboration with DSU, CDSIMER, and the Indian Red Cross Society, successfully organized the Mega Blood Donation Drive 2025 on 19th November 2025 at The Arena, DSU Main Campus. The initiative aimed to foster a sense of social responsibility among students and staff while supporting the critical need for blood during medical emergencies. The drive commenced at 10:00 AM and received overwhelming participation from both students and faculty. Notably, students and faculty members from the Data Science Department actively contributed by volunteering and donating blood. Their commitment ensured seamless coordination, effective donor assistance, and smooth management of registration activities throughout the event. With the enthusiastic involvement of 20+ students and faculty and the strong support of student volunteers, the initiative achieved remarkable success. The leadership and supervision of Dr. Santhosh Kumar G, Dr. U. Pavan Kumar, Prof. Prapti Bhattacharjee, and Prof. Kishor Malakar ensured flawless coordination and smooth execution throughout the programme.

Debate Competition on “Gender Equality: Perspectives for a Balanced Society”

The Department of Computer Science and Engineering successfully conducted the Debate Competition on “Gender Equality: Perspectives for a Balanced Society” on 27th November 2025. Students actively participated and presented well-researched viewpoints, thoughtful arguments, and constructive counterpoints. Their clarity of thought, analytical abilities, and professionalism highlighted their awareness and commitment to promoting equality and inclusiveness. Several enthusiastic teams took part in the competition, and two teams were awarded the Winner and Runner-up trophies for their outstanding performances. We extend our sincere gratitude to Dr. Girisha G. S., Chairperson, Department of CSE, for his constant motivation and support. Our heartfelt appreciation also goes to the Jury Members - Dr. Seema Tharannum and Dr. Revathi V — for their expert evaluation and fair judgment. We thank the event organizers — Dr. Basavaraj N. Hiremath, Faculty Advisor, IEEE CS; Dr. Savitha Hiremath, Associate Professor; Prof. Nandini K, Assistant Professor; and Prof. Shilpa Sudheendran, Assistant Professor — for their coordinated efforts in planning and executing the event. We also acknowledge the enthusiastic participation of students, faculty members, and student coordinators, whose contributions ensured the smooth and successful conduct of the programme.


GPS Map Camera
Bannikuppe, Karnataka, India
Mf62+r7, Bannikuppe, Karnataka 562112, India
Lat 12.661622° Long 77.450613°
Thursday, 27/11/2025 03:27 PM GMT +05:30
Google

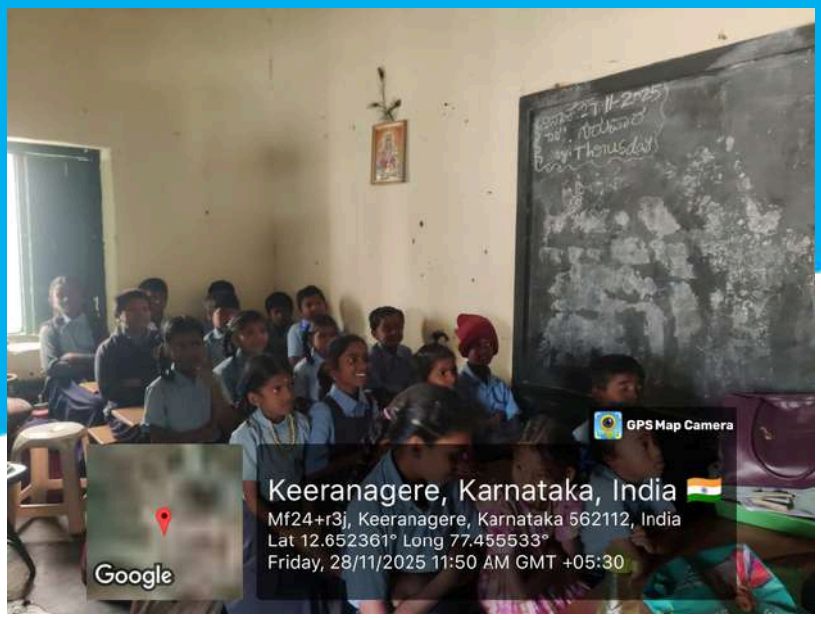

GPS Map Camera
Bannikuppe, Karnataka, India
Mf62+r7, Bannikuppe, Karnataka 562112, India
Lat 12.661612° Long 77.4506°
Thursday, 27/11/2025 03:17 PM GMT +05:30
Google

“CHEMFUN Club”

ChemFun Club, with 300+ registered members supported by 10 core members and 25 volunteers, hosted a pre-launch event on 14 November 2025 in collaboration with the VIVA Club, featuring an AI workshop followed by a logo design competition with 104 participants, where the top three entries were recognized as “Creative Logo Designer.” The club was officially launched on 24 November 2025, with the logo unveiled by Dr. Badekai Ramachandra Bhat, Professor (HAG), Department of Chemistry, NIT Karnataka, Surathkal, who also delivered a ChemTalk on “Exploring Current Research in Biosensing Technology.” The program included several student activities and saw active participation from more than 300 students.

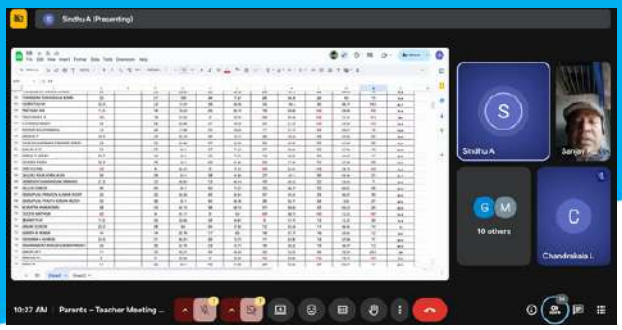
“Children’s Day” - ASE

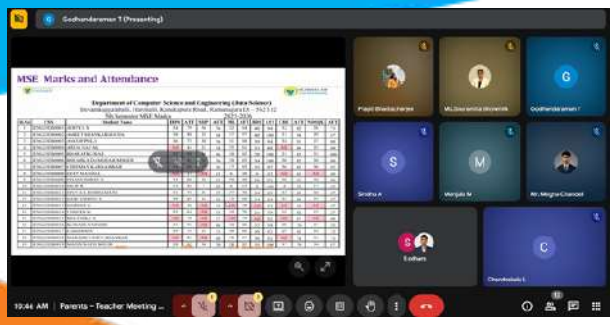
On 28 November 2024, the Alatus Club of the Department of Aerospace Engineering conducted a Children’s Day outreach program at the Government School, Kiranagere, for 25 students from Classes 1 to 5. The club members engaged the children in a clay modelling activity, shared insights on the importance and significance of Children’s Day, and distributed donated books and stationery kits, contributed by students and faculty of the department.

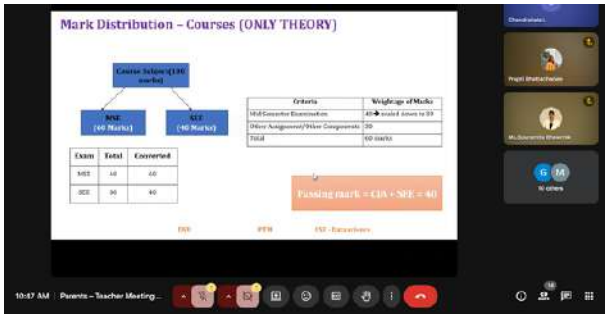


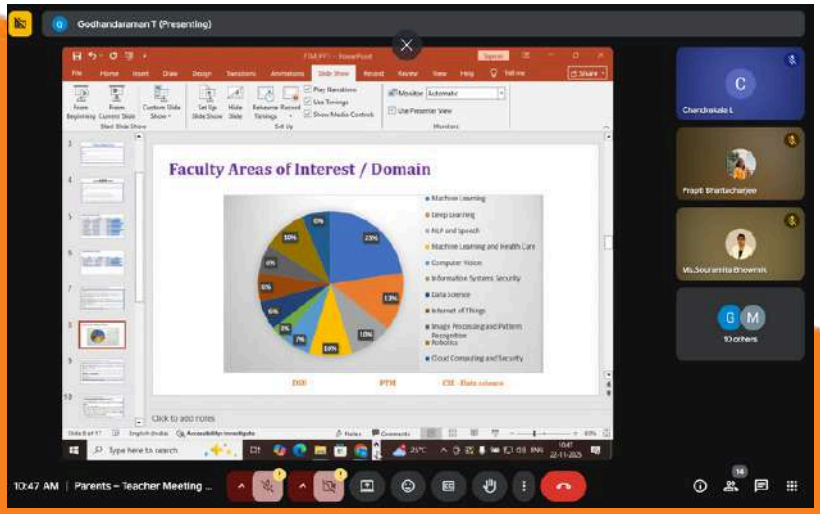
“Parents-Teachers Meeting” - CSE(DS)

The Department of Computer Science and Engineering (Data Science), School of Engineering, Dayananda Sagar University, conducted a Parents–Teachers Meeting (PTM) on 22nd November 2025 to strengthen the communication between parents and teachers. The session aimed to discuss students’ academic performance, attendance, behaviour, strengths, and areas of improvement. The PTM provided a platform for parents to understand their child’s learning progress and offer feedback for better academic support.









SCHOOL OF
ENGINEERING

INDUSTRIAL VISITS

Visit to “Bangalore tech Summit 2025”

Bangalore Tech Summit 2025, held from 18 to 20 November 2025 at the Bangalore International Exhibition Centre, Bengaluru, witnessed active participation from faculty members and students across multiple departments of DSU. Their involvement highlighted the university’s growing engagement with cutting-edge developments in science, technology, and innovation. Our Vice Chancellor, Dr. B. S. Satyanarayana, was one of the distinguished speakers at the summit, further showcasing DSU’s leadership in advancing research, industry collaboration, and the future of technology-driven education.

Visit to “ARTPARK”

The training session sponsored by ARTPARK was conducted from 24th November to 28th November 2025 for 20 students from the 3rd and 5th semesters and two technical staff of ME department at National Skill Training Institute. The program provided hands-on experience and focused on advanced technologies, significantly enhancing the students' technical skills. On 28th November 2025, a valedictory ceremony was held, where certificates were awarded, and students shared their learning experiences. Additionally, the students visited the ARTPARK facility, where they explored cutting-edge innovations and gained valuable insights into real-world applications. The entire training proved to be a highly enriching experience for all participants. Dr Saravanabavan, Chairman of ME Department, Dr Vinayak Hemadri, Professor of ME department and Abhijith N, Assistant Professor of ME department were present of Valedictory function and felicitated course co-ordinators at NSTI.

Industry visit to “Infosys Bangalore DC Campus to celebrate Tech 2025”

The Department of Computer Science & Engineering, SoE, Dayananda Sagar University, attended the “Celebrating Tech 2025” event held on 20th November 2025 at the Infosys Bangalore DC campus. Students have been nominated for the Internship at Infosys. The event featured several project presentations from the previous batch of internship teams, evaluated by industry experts. The discussions and suggestions shared during the sessions were highly insightful and helped our students understand the expectations and standards required for high-quality industry projects. The students also had the opportunity to interact in person with the Infosys team and discuss the ongoing projects currently being developed at Infosys. We extend our sincere thanks to our Chairperson, Dr. Girisha G. S. Sir, and the Infosys Springboard SPoC, Dr. Basavaraj N. Hiremath Sir, for creating this valuable opportunity for our students to participate in such events.

Industrial Visit to “U R Rao Satellite Centre (URSC), ISRO”

The Department of Computer Science and Engineering, Dayananda Sagar University, organized an industrial visit to the U R Rao Satellite Centre (URSC), ISRO, on 25 November 2025, where students had a wonderful and inspiring learning experience. Senior scientists at the URSC Exhibition Centre explained the latest satellite launch technologies and recent innovations in space research, giving students valuable insights into India’s advancements in the space sector. We extend our sincere thanks to Dr. Girisha G. S., Chairperson, for providing this excellent opportunity, and to the Transport Department for arranging timely transportation. We also express our gratitude to the DSU Management for their continued support.

SCHOOL OF
ENGINEERING

FACULTY ACHIEVEMENTS

Dr. Pramod Kumar Naik
Associate Professor & Chairperson
Department of AI & Robotics

- Dr. Pramod Kumar Naik served as the keynote speaker for the AI Conclave 2025, delivering insights on responsible and impactful AI. He also participated in the round-table panel discussion, contributing expert perspectives on innovation, ethics, and future AI applications.

- Dr. Pramod Kumar Naik attended the inaugural Bengaluru Skill Summit 2025, organized by the Department of Skill Development, Entrepreneurship & Livelihood (SDEL), Government of Karnataka.

Dr. Santhosh Kumar G
Associate Professor
Department of CSE(DS)

- Dr. Santhosh Kumar G published a research paper titled “Retrieval-Augmented Graph Neural Model for Medical Question Answering System” at the 5th International Conference on Evolutionary Computing and Mobile Sustainable Networks (ICECMSN 2025), organized by the Department of Information Technology, Hindusthan Institute of Technology, Coimbatore, India, held from 24th to 26th November 2025.

Hindusthan Institute of Technology ICECMSN IEEE Computational Intelligence Society

Certificate of Presentation

This certificate is presented to

Santhosh Kumar G

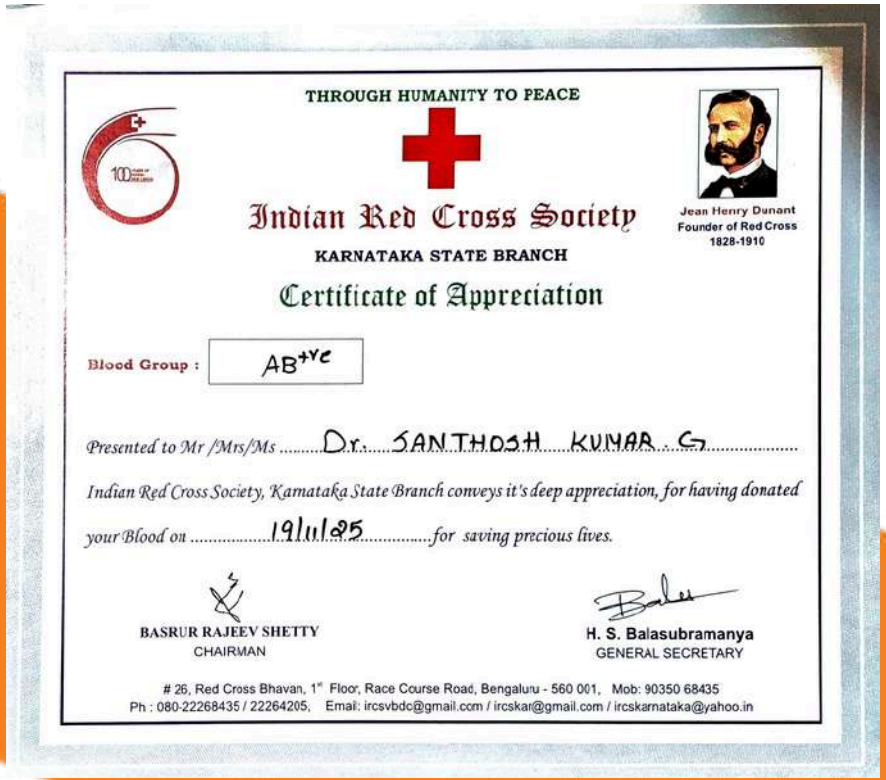
for the paper titled

Retrieval-Augmented Graph Neural Model for Medical Question Answering System

presented at the 5th International Conference on Evolutionary Computing and Mobile Sustainable Networks (ICECMSN 2025) organized by Department of Information Technology, Hindusthan Institute of Technology, Coimbatore, India on 24-26 November 2025. Your contribution and active involvement have made this event a success.

Session Chair | Dr. M. Duraipandian, Conference Chair | Dr. C. Natarajan, Principal

- Dr. Santhosh Kumar G received a Certificate of Appreciation from the Indian Red Cross Society, Karnataka State Branch, for his voluntary blood donation. With a blood group of AB+ve, he made his contribution on 19 November 2025. The organization expressed its deep gratitude for his act of compassion and service toward saving precious lives. This recognition highlights his commitment to humanity and social responsibility.



THROUGH HUMANITY TO PEACE

Indian Red Cross Society

KARNATAKA STATE BRANCH

Jean Henry Dunant
Founder of Red Cross
1828-1910

Certificate of Appreciation

Blood Group : AB+ve

Presented to Mr /Mrs/Ms ..... Dr. SANTHOSH KUMAR. G .....

Indian Red Cross Society, Karnataka State Branch conveys it's deep appreciation, for having donated your Blood on ..... 19/11/25 ..... for saving precious lives.

BASRUR RAJEEV SHETTY
CHAIRMAN

H. S. Balasubramanya
GENERAL SECRETARY

26, Red Cross Bhavan, 1st Floor, Race Course Road, Bengaluru - 560 001, Mob: 90350 68435
Ph : 080-22268435 / 22264205, Email: ircsvbdc@gmail.com / ircskar@gmail.com / ircskarnataka@yahoo.in

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

- Dr. Poongodi T has served as a Session Chair for the 1st IEEE Uttar Pradesh Section Women in Engineering International Conference on Electrical Electronics and Computer Engineering (UPWIECON-2025) held during 30th to 31st October 2025, organized by NIELIT Dehradun.

रा.इ.सू.प्रौ.सं NIELIT

IEEE Advancing Technology for Humanity

1st IEEE Uttar Pradesh Section Women in Engineering International Conference on Electrical Electronics and Computer Engineering (UPWIECON-2025)

30th - 31st October 2025

Certificate of Acknowledgement

We acknowledge the participation of **Dr. Poongodi T** of **Dayananda Sagar University, Bangalore** as **Session Chair** during 1st IEEE Uttar Pradesh Section Women in Engineering International Conference on Electrical Electronics and Computer Engineering (UPWIECON-2025) held during 30th – 31st October 2025 organized by NIELIT Dehradun.

Dr Smita Sharma
Wie Chair IEEE UP Section

Dr. Alok Tripathi
Director (Scheme/Skilling) & CoE, NIELIT

Dr. S. K. Dhurandher
Executive Director, NIELIT

Prime Sponsor AcademIQ.io Co-Sponsors nari CREATIVEPACK EIP

- Dr. Poongodi T, along with their co-authors Bilal Ahmed N K, Devesh M, Punith Kumar B, and Harmayni Khandal, has presented the research paper titled "Questionnaire Generator using TinyLlama Sentence Transformer and LangChain" in the IEEE International Conference on Electrical, Electronics and Computer Science with Advanced Power Technologies – A Future Trend (ICE2CPT 2025), organized by the Department of Electrical Engineering, National Institute of Technology Jamshedpur, in association with the IEEE Kolkata Section, IEEE Industrial Electronics Society, and IEEE Student Branch, NIT Jamshedpur, held from 29th to 31st October 2025.

2025 IEEE INTERNATIONAL CONFERENCE ON ELECTRICAL, ELECTRONICS AND COMPUTER SCIENCE WITH ADVANCE POWER TECHNOLOGIES - A FUTURE TREND

(ICE2CPT 2025)

29-31 October, 2025

National Institute of Technology Jamshedpur, Jharkhand, India

Certificate of Participation

This is to certify that Mr./Ms./Dr. Bilal Ahmed N K has presented the paper ID 654 titled "Questionnaire Generator using TinyLlama Sentence Transformer and LangChain" authored by Bilal Ahmed N K, Devesh M, Punith Kumar B, Harmayni Khandal, Dr. Poongodi T, during the IEEE International Conference on Electrical, Electronics and Computer Science with Advanced Power Technologies – A Future Trend (ICE2CPT 2025), organized by the Department of Electrical Engineering, National Institute of Technology Jamshedpur, in association with the IEEE Kolkata Section, IEEE Industrial Electronics Society, and IEEE Student Branch, NIT Jamshedpur, held from 29th to 31st October 2025.

Prof. P. Sanjeevikumar, General Chair, ICE2CPT 2025

Dr. Veerpratap Meena, General Chair, ICE2CPT 2025

Prof. Prabha Chand, Organizing Chair, ICE2CPT 2025

Dr. Kumari Namrata, Organizing Chair, ICE2CPT 2025

- Dr. Poongodi T contributed as an External Member in the Board of Studies (BoS) meeting, Department of Computer Science & Engineering, Jain University, FET Campus, Jakkasandra, Kanakapura, scheduled on 27 November 2025, at 10.00 - 11.45 A.M, provided valuable inputs for the 2024 Batch in designing the curriculum and syllabi.

Dr. Srikumar
Associate Professor
Department of Mathematics

- Dr. Srikumar published the research article entitled “Evaluating Degree-based Topological indices in QSPR Modeling of Anticancer drugs using Linear and Multilinear Regression” in the journal IJQC-International Journal of Quantum Chemistry, A John Wiley & Sons Publication on 14 Nov 2025, IF: 2.444, ISSN: 0020-7608, H-Index: 119, Vol 125, Issue 22, Indexation: SCIE, WoS, Chemical Abstract Service, Scopus Q3 indexed.

QUANTUM CHEMISTRY

RESEARCH ARTICLE

Evaluating Degree-Based Topological Indices in QSPR Modeling of Anticancer Drugs Using Linear and Multilinear Regression

Bharathi Sheshahili Nagaraja Urs, Srikumar Krishnamurthy, Anand Solomon Kamalakaran, Deepika Togarshetru

First published: 14 November 2025 | https://doi.org/10.1002/qua.70123

Read the full text › PDF TOOLS SHARE

ABSTRACT

Cancer arises from the rapid growth of aberrant cells within the body. A range of treatment options are available, including surgery, radiation, hormone therapy, and more, for managing this perilous condition. Anticancer drugs encompassing alkylates and metabolites are employed in the treatment of this malignant ailment. Numerous studies indicate that the attributes of alkanes, such as their chemical structures, boiling points, melting points, flash points, vapor pressure, molar refraction, enthalpy, pH, and so forth, exhibit correlations with anticancer drugs. In this proposed study, five topological indices $VL(G)$, $\sqrt{VL(G)}$, $[VL(G)]^2$, $\frac{1}{VL(G)}$, $\frac{1}{\sqrt{VL(G)}}$ are discussed to assist researchers in comprehending the properties and reactions of 17 anticancer drugs: Amathaspiramid E, Aminopterin, Aspidostomide E, Carmustine, Caulibugulone E, Convolutamide A, Convolutamine F, Convolutamydine A, Daunorubicin, Deguelin, Melatonin, Minocycline, Perfragilin A, Podophyllotoxin, Pterocellin B, Raloxifene, and Tambjamine K. Furthermore, we delve into the Quantitative Structure–Property Relationship (QSPR) analysis of these five degree-based topological indices using linear and multilinear regression analysis. Our findings demonstrate that three out of the five indices display a robust correlation with the physicochemical properties of anticancer drugs.

Dr. Naresh Saha
Assistant Professor
Department of Mathematics

- Dr. Naresh Saha published the research article entitled “Pattern formation in a rumor model under dispersion” in the journal The European Physical Journal Special Topics by Springer Nature publications on 15 Nov 2025, IF: 2.3, ISSN: 1951-6355, H-Index: 96, Indexation: SCIE and Scopus Q2 indexed.

SPRINGER NATURE Link

Find a journal Publish with us Track your research Search

Home › The European Physical Journal Special Topics › Article

Pattern formation in a rumor model under dispersion

Regular Article | Open access | Published: 15 November 2025

(2025) Cite this article

You have full access to this open access article

Download PDF

Naresh Saha, Yiran Li, Subrata Ghosh, Ranjib Banerjee, Tomasz Kapitaniak, Agnieszka Chudzik, Syamal Kumar Dana & Chittaranjan Hens

338 Accesses Explore all metrics

Abstract

Some instabilities often trigger pattern formation in reaction diffusion systems, offering valuable insights on the underlying dynamics and interactions driving the emergence of patterns in numerous animate and inanimate systems. We investigate formation of Turing patterns resulting in a generalized two-compartment (Innocent-Spreader) model for rumor spreading through spatial dispersion. Our analysis reveals the significance of diffusion on the evolution of holes from stripes and as well as the continuous growth of spots. Especially, we explore the role of some crucial parameters, including the rate of media correction, inhibition, forgetting, and self-correction on controlling the spreading of rumors. Finally, we check how initial conditions influence the emergence of mixed-mode patterns, characterized by a low diffusion rate.

Dr. Paresh Kumar Panigrahi
Assistant Professor
Department of Mathematics

- Dr. Paresh Kumar Panigrahi published the research article entitled “Gradient-based optimization approach to solve fuzzy algebraic equations governed engineering problems” in the book chapter 5 by IET - Institution of Engineering and Technology publications on 05 Nov 2025, ISSN: 9781837240289, Indexation: Scopus.

Chapter 5

Gradient-based optimization approach to solve fuzzy algebraic equations governed engineering problems

Authors: Paresh Kumar Panigrahi and Sukanta Nayak Authors Info & Affiliations

Publication: AI, Numerical Optimization, IoT and Blockchain for Healthcare 4.0 • https://doi.org/10.1049/PBHE065E_ch5

Get access

Abstract

In this chapter, we explore a gradient-based optimization technique to tackle a fuzzy-valued unconstrained optimization problem in which the objective function is fuzzy. In this regard, the fuzzy system of linear equation (FSLE) can be converted into fuzzy-valued optimization problem. Using the concept of fuzzy center and fuzzy arithmetic, the proposed approach can deal with the uncertain system. Then, using the proposed method, both only fuzzy (where either the coefficient matrix or right-hand side vector is fuzzy) and fully fuzzy (where both coefficient matrix and right-hand side vector are fuzzy) systems are investigated. Convergence analysis is conducted to ensure the existence of a solution, followed by solving a variety of example problems using the proposed method across different scenarios. Then, the obtained solutions are compared with the other existing methods, and it is found to be a good agreement.

- Dr. Paresh Kumar Panigrahi published the research article entitled “Gradient Like Optimization Technique with Finite Element Method to Quantify the Uncertainties under Interval Type 2 Fuzzy Environments“ in the journal Mathematics and Computers in Simulation by Elsevier publications on 22 Nov 2025, IF: 4.4, ISSN: 1872-7166, Vol 242, H-Index: 96, Indexation: Scopus indexed Q1, Science Citation Index Expanded (SCIE).

Mathematics and Computers in Simulation

Gradient like optimization technique with finite element method to quantify the uncertainties under interval type 2 fuzzy environments

Paresh Kumar Panigrahi, Sukanta Nayak, Oscar Castillo

Abstract

This study proposes a technique to quantify uncertainties in structural engineering systems under interval type 2 fuzzy (IT2F) environments. The finite element method (FEM) is combined with optimization approach to investigate the field variables with interval type 2 fuzzy uncertainties. To address these exclusive features, here the interval type 2 fuzzy finite element method can be incorporated to discretized the element and transformed the governing differential equation into algebraic equations. To estimate the field variables that are getting affected by uncertain parameters, the authors have proposed IT2F gradient descent optimization (IT2FGDO) algorithm. The uncertainties are taken in interval type 2 fuzzy environment. To validate the proposed algorithm, convergence analysis is performed. The result show significant differences and uncertain analysis of structure with different temperature. Then, two cases were considered to quantify the uncertainty and established the stability condition of the systems. It is guaranteed that the solution of IT2FGDO technique possess less uncertainty in interval type 2 fuzzy environment.

Dr. Shital Saha
Assistant Professor
Department of Mathematics

- Dr. Shital Saha published the research article entitled “Burg entropy in terms of survival function and its application in model selection “ in the journal Methodology and Computing in Applied Probability by Springer Nature(Netherlands) publications on 01 Nov 2025, IF: 1.0, ISSN: 1387-5841, Vol 27, Issue 4, H-Index: 36, Indexation: SCI, Scopus indexed Q2.


SPRINGER NATURE Link

Burg entropy in terms of survival function and its application in model selection

Abstract

Prof. R. Sriramkumar
Assistant Professor
Department of CSE (AIML)

- Prof.R. Sriramkumar, Assistant Professor, Department of Computer Science and Engineering (Artificial Intelligence and Machine Learning), Dayananda Sagar University, Bengaluru, has successfully completed the NPTEL course titled “Stress Management” conducted during July–August 2025. The course lasted 4 weeks, and he secured an overall score of 58.34/75, with a perfect 25/25 in assignments, achieving a final consolidated score of 83% and Elite Silver certification.

Elite

NPTEL ONLINE CERTIFICATION

(Funded by the MoE, Govt. of India)

Skill India
कौशल भारत-कुशल भारत

This certificate is awarded to

SRIRAMKUMAR R

for successfully completing the course

Stress Management

with a consolidated score of 83 %

Online Assignments	25/25	Proctored Exam	58.34/75

Total number of candidates certified in this course: 2480

Jul-Aug 2025

(4 week course)

Prof. Haimanti Banerji
Coordinator, NPTEL
IIT Kharagpur

Indian Institute of Technology Kharagpur

swayam

Roll No: NPTEL25HS140S348400129 To verify the certificate No. of credits recommended: 1 or 2

Prof. Trupthi Rao
Assistant Professor
Department of CSE (AIML)

- Prof. Trupthi Rao, Assistant Professor, Department of Computer Science and Engineering (Artificial Intelligence and Machine Learning), has presented a paper entitled “Design and Enhanced Analysis of Silk Fabric Classification Using MobileNetV2 with Grad-CAM Interpretability” in 2025 6th Global Conference for Advancement in Technology (GCAT) during 24th to 26th October 2025 held at Nagarjuna College of Engineering & Technology, Bangalore.

- Prof. Trupthi Rao, Assistant Professor, Department of Computer Science and Engineering (Artificial Intelligence and Machine Learning), has presented a paper entitled “Crop and Farming Technique Selection: A Hybrid Fuzzy AHP-TOPSIS Model” in the 2025 6th Global Conference for Advancement in Technology (GCAT) during 24th to 26th October 2025 held at Nagarjuna College of Engineering & Technology, Bangalore.

- Prof. Trupthi Rao, Assistant Professor, Department of Computer Science and Engineering (Artificial Intelligence and Machine Learning), has presented a paper entitled “Causal LIME: Enhancing Local Explanations with Causal Perturbations for Military Sensor Data” at the 2025 IEEE Region 10 Conference (TENCON 2025), held at the Sabah International Convention Centre (SICC), Kota Kinabalu, Malaysia, from 27–30 October 2025.

- Prof. Trupthi Rao, Assistant Professor, Department of Computer Science and Engineering (Artificial Intelligence and Machine Learning), served as a Reviewer during the IEEE International Conference on Electrical, Electronics and Computer Science with Advance Power Technologies – A Future Trend (ICE2CPT 2025), organized by the Department of Electrical Engineering, National Institute of Technology Jamshedpur, in association with the IEEE Kolkata Section, IEEE Industrial Electronics Society and IEEE Student Branch, NIT Jamshedpur, held from 29th to 31st October 2025.

Dr. S.V.K.R.Rajeswari
Assistant Professor
Department of CSE (AIML)

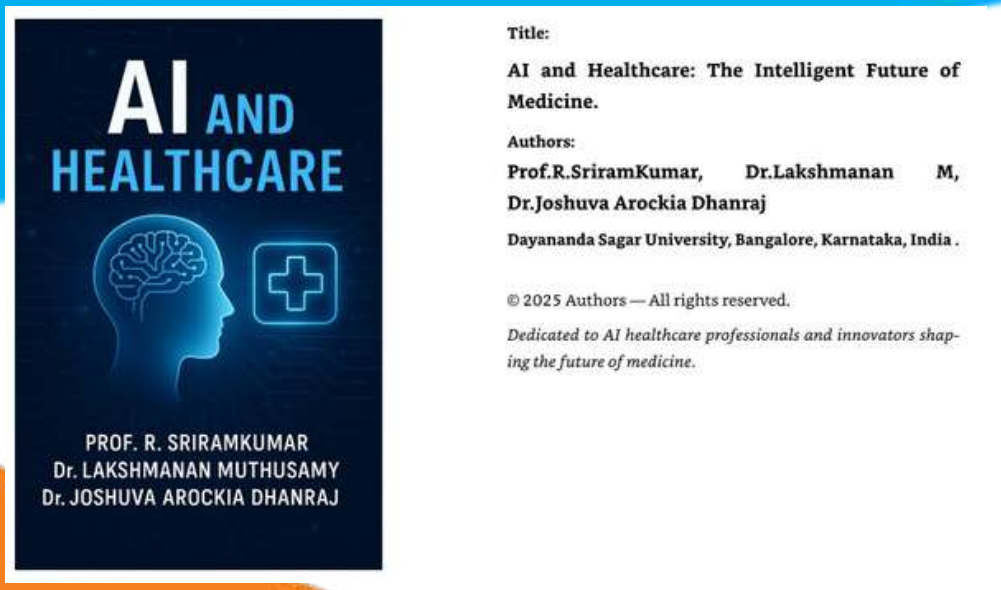
- Dr.V.K.R. Rajeswari Satuluri, Assistant Professor, Department of Computer Science and Engineering (Artificial Intelligence and Machine Learning), Dayananda Sagar University, has served as a Resource Person for the Personality Development Workshop organized by SRM Centre for Clinical Pharmacology at SRM Medical College Hospital & Research Centre, held during 7th and 8th November, 2025.

Prof. R. Sriramkumar
Assistant Professor
Department of CSE (AIML)

Dr. M. Lakshmanan
Assistant Professor
Department of CSE (AIML)

Dr. Joshuva Arockia Dhanraj
Professor
Department of CSE (AIML)

- Prof. R. Sriramkumar, Assistant Professor, Dr. M. Lakshmanan, Assistant Professor, and Dr. Joshuva Arockia Dhanraj, Professor, Department of Computer Science and Engineering (Artificial Intelligence and Machine Learning), School of Engineering, Dayananda Sagar University, have successfully published a book titled “AI and Healthcare: The Intelligent Future of Medicine” on Amazon Kindle.



Title:

AI and Healthcare: The Intelligent Future of Medicine.

Authors:

Prof.R.SriramKumar, Dr.Lakshmanan M, Dr.Joshuva Arockia Dhanraj

Dayananda Sagar University, Bangalore, Karnataka, India .

Dedicated to AI healthcare professionals and innovators shaping the future of medicine.

Prof. Govind Kumar Pandey
Assistant Professor
Department of CSE (AIML)

- Mr. Govind Kumar Pandey, Assistant Professor, Department of Computer Science and Engineering (Artificial Intelligence and Machine Learning), School of Engineering, Dayananda Sagar University (DSU), Bangalore, has participated in an online webinar on “RF Power Amplifier Design Methodology” organized by the IEEE Antennas and Propagation Society (AP-S) Student Branch Chapter, IIT Jodhpur, under the IEEE Rajasthan Subsection, held on 11th October, 2025.


IEEE AP-S Antennas and Propagation Society

IEEE RAJASTHAN SUB SECTION

CERTIFICATE OF PARTICIPATION

This certificate is proudly awarded to

Govind Kumar Pandey

for attending the online webinar conducted on the topic

RF POWER AMPLIFIER DESIGN METHODOLOGY

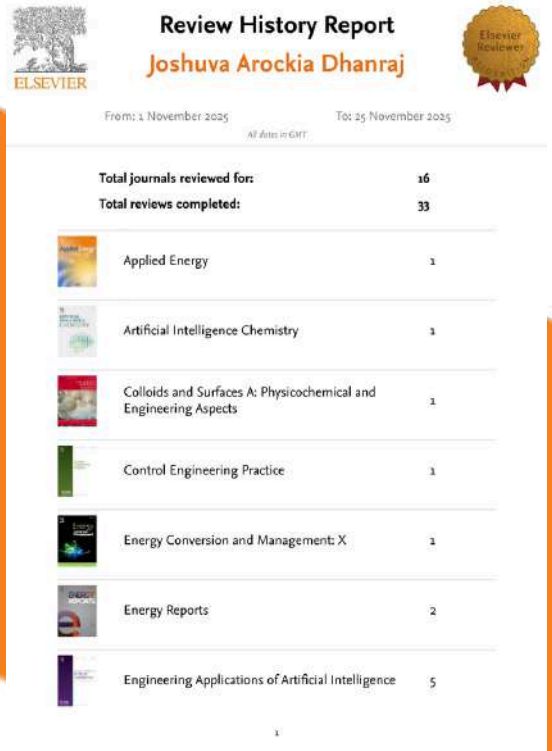
Held on October 11th, 2025 at

INDIAN INSTITUTE OF TECHNOLOGY JODHPUR

Event Organiser
Dr. Soumava Mukherjee
Branch Counselor, IEEE APS SB Chapter, IIT Jodhpur

Dr. Joshuva Arockia Dhanraj
Professor
Department of CSE (AIML)

- Dr. Joshuva Arockia Dhanraj, Professor, Department of Computer Science and Engineering (Artificial Intelligence and Machine Learning), School of Engineering, Dayananda Sagar University (DSU), Bangalore, has served as a peer reviewer for 16 high-impact Scopus- and SCI-indexed international journals during the period from 1st to 25th November 2025, completing a total of 33 manuscript reviews. His reviews covered multidisciplinary areas, including Energy Systems, Artificial Intelligence, Control Engineering, Sustainable Computing, and Environmental Studies, evaluating advanced topics such as federated learning, digital twins, hydrogen technologies, microgrid modelling, and sustainable computing. His contributions significantly supported the dissemination of high-quality research and reflect his strong scholarly engagement with the global research community.



Review History Report

Joshuva Arockia Dhanraj

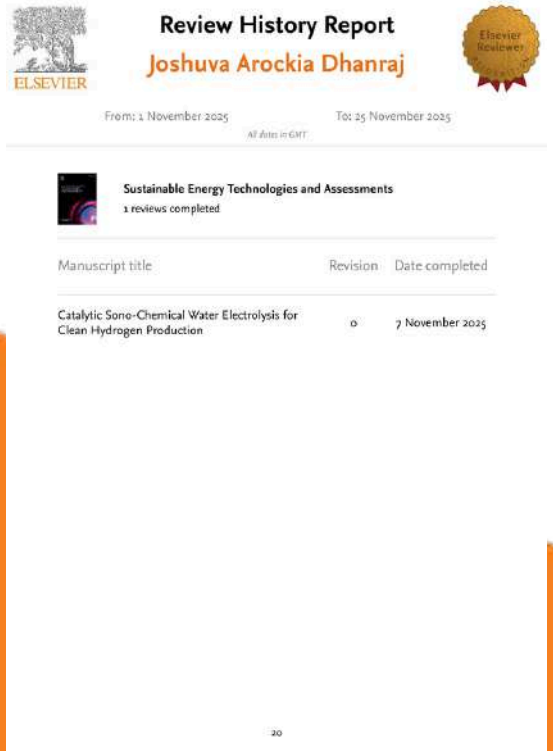
From: 1 November 2025 To: 25 November 2025

All dates in GMT

Total journals reviewed for:	16
Total reviews completed:	33

Applied Energy	1
Artificial Intelligence Chemistry	1
Colloids and Surfaces A: Physicochemical and Engineering Aspects	1
Control Engineering Practice	1
Energy Conversion and Management: X	1
Energy Reports	2
Engineering Applications of Artificial Intelligence	5

1



Review History Report

Joshuva Arockia Dhanraj

From: 1 November 2025 To: 25 November 2025

All dates in GMT

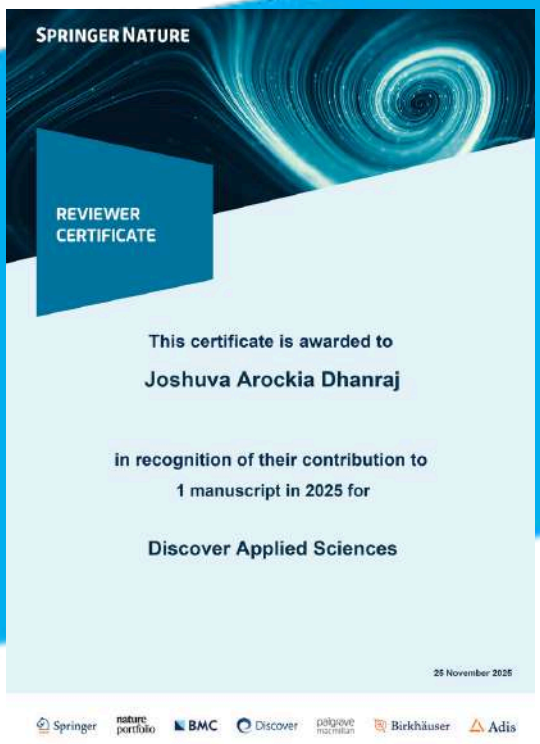
Sustainable Energy Technologies and Assessments

1 reviews completed

Manuscript title	Revision	Date completed
Catalytic Sono-Chemical Water Electrolysis for Clean Hydrogen Production	0	7 November 2025

20

- Dr. Joshuva Arockia Dhanraj, Professor, Department of Computer Science and Engineering (Artificial Intelligence and Machine Learning), School of Engineering, Dayananda Sagar University (DSU), Bangalore, has been recognized by Springer Nature for serving as a peer reviewer for the journal Discover Applied Sciences in 2025, having successfully completed the review of one manuscript.



- Dr. Joshuva, Professor, Department of Computer Science and Engineering (Artificial Intelligence and Machine Learning), School of Engineering, Dayananda Sagar University (DSU), Bangalore, actively participated in the advanced technical webinar titled “Demonstration of ML-Driven VLSI Design Tools”, held on 6 November 2025, organized jointly by AMD-Xilinx and CoreEL Technologies.

- Dr. Joshuva Arockia Dhanraj, Professor, Department of Computer Science and Engineering (Artificial Intelligence and Machine Learning), School of Engineering, Dayananda Sagar University (DSU), Bangalore, successfully presented his research paper titled “Nanosatellite and IoT-Enabled Climate-NDVI Data Fusion for Accurate Wheat Yield Prediction” at ICCES 2025.


IEEE
XPLORE COMPLIANT ISBN 979-8-3315-9756-6

ELECTRON DEVICES SOCIETY

Certificate of Presentation

This is to certify that

Joshuva Arockia Dhanraj

has successfully presented the paper entitled

Nanosatellite and IoT-Enabled Climate-NDVI Data Fusion for Accurate Wheat Yield Prediction

at

10th International Conference on Communication and Electronics Systems (ICCES 2025) organized by PPG Institute of Technology, Coimbatore, India on 28-30, October 2025.

Session Chair

Dr. V. Bindhu
Organizing Chair

Dr. Nandhakumar S
Principal

- Dr. Joshuva Arockia Dhanraj, Professor, Department of Computer Science and Engineering (Artificial Intelligence and Machine Learning), School of Engineering, Dayananda Sagar University (DSU), Bangalore, has served as an official reviewer for the IEEE International Conference on Electrical, Electronics and Computer Science with Advance Power Technologies – A Future Trend (ICE2CPT 2025), held at NIT Jamshedpur in association with the IEEE Kolkata Section, IEEE Industrial Electronics Society, and IEEE Student Branch.


Certificate No. NITJSR/ICE2CPT-2025/RC-467

2025 IEEE INTERNATIONAL CONFERENCE ON ELECTRICAL, ELECTRONICS AND COMPUTER SCIENCE WITH ADVANCE POWER TECHNOLOGIES - A FUTURE TREND

IEEE

(ICE2CPT 2025)

29-31 October, 2025

National Institute of Technology Jamshedpur, Jharkhand, India

Certificate of Appreciation

This is proudly presented to Mr./Ms./Dr. Joshuva Arockia Dhanraj of Dayananda Sagar University in recognition of your valuable contribution as a Reviewer, during the IEEE International Conference on Electrical, Electronics and Computer Science with Advance Power Technologies – A Future Trend (ICE2CPT 2025), organized by the Department of Electrical Engineering, National Institute of Technology Jamshedpur, in association with the IEEE Kolkata Section, IEEE Industrial Electronics Society and IEEE Student Branch, NIT Jamshedpur, held from 29th to 31st October 2025.

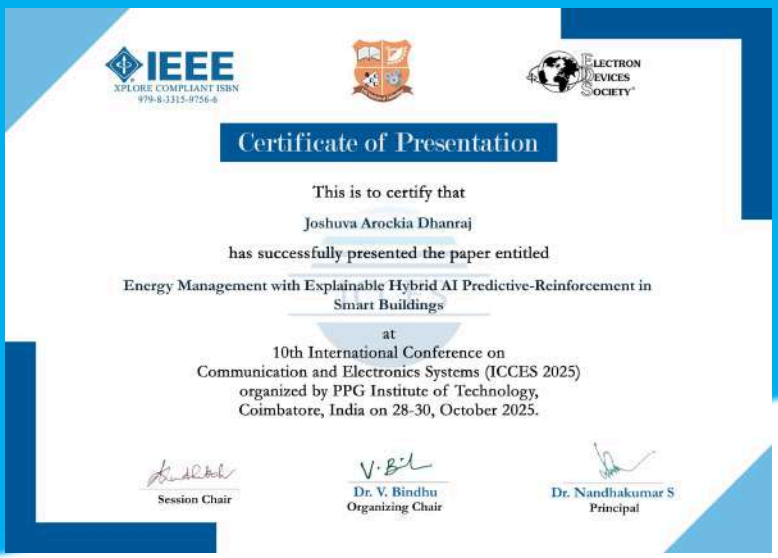
Prof. P. Sanjeevikumar
General Chair
ICE2CPT 2025

Dr. Veerpratap Meena
General Chair
ICE2CPT 2025

Prof. Prabha Chand
Organizing Chair
ICE2CPT 2025

Dr. Kumari Namrata
Organizing Chair
ICE2CPT 2025

- Dr. Joshuva Arockia Dhanraj, Professor, Department of Computer Science and Engineering (Artificial Intelligence and Machine Learning), School of Engineering, Dayananda Sagar University (DSU), Bangalore, successfully presented his research paper titled “Energy Management with Explainable Hybrid AI Predictive-Reinforcement in Smart Buildings” at the 10th International Conference on Communication and Electronics Systems (ICCES 2025), held at PPG Institute of Technology, Coimbatore, during 28th to 30th October 2025.


IEEE
XPLORE COMPLIANT ISBN
979-8-3315-9756-6

ELECTRON DEVICES SOCIETY

Certificate of Presentation

This is to certify that

Joshuva Arockia Dhanraj

has successfully presented the paper entitled

Energy Management with Explainable Hybrid AI Predictive-Reinforcement in Smart Buildings

at

10th International Conference on
Communication and Electronics Systems (ICCES 2025)
organized by PPG Institute of Technology,
Coimbatore, India on 28-30, October 2025.

Session Chair

Dr. V. Bindhu
Organizing Chair

Dr. Nandhakumar S
Principal

- Dr. Joshuva Arockia Dhanraj, Professor, Department of Computer Science and Engineering (Artificial Intelligence and Machine Learning), School of Engineering, Dayananda Sagar University (DSU), Bangalore, successfully completed the AICTE–ATAL Faculty Development Program titled “Next-Gen VLSI and Semiconductor Systems: Integrating Machine Learning for Intelligent Design Automation,” conducted at R.M.D. Engineering College from 3rd to 8th November 2025.


ATAL/2025/1759913940

Skill India

ATAL

ALL INDIA COUNCIL FOR TECHNICAL EDUCATION

Nelson Mandela Marg, Vasant Kunj, New Delhi -110070

AICTE Training and Learning (ATAL) Academy

Certificate

It is certified that Dr. A. Joshuva, Professor of Dayananda Sagar University has successfully participated & completed AICTE Training and Learning (ATAL) Academy Faculty Development Program on Next-Gen VLSI and Semiconductor Systems: Integrating Machine Learning for Intelligent Design Automation at R.M.D. ENGINEERING COLLEGE from 03/11/2025 to 08/11/2025.

C.Bennila Thangammal
Professor Level (AICTE Institute), Coordinator
R.M.D. ENGINEERING COLLEGE

Dr. Sunil Luthra
Director & Bureau Head
Training and Learning Bureau, AICTE

Dr. Vinutha N
Associate Professor
Department of CSE (AIML)

- Dr. Vinutha N, Professor, Department of Computer Science and Engineering (Artificial Intelligence and Machine Learning), School of Engineering, Dayananda Sagar University (DSU), Bangalore, presented the paper titled “Advanced Vision Transformer Ensemble For Automated Polycystic Ovarysyndrome Classification: A Deep Learning Approach With Gpu Optimisation” at the 2nd IEEE International Conference on Intelligent Signal Processing and Effective Communication Technologies 2025, held on 07–08 November 2025 at ABV–IIITM Gwalior.

Atal Bihari Vajpayee Indian Institute of Information Technology and Management Gwalior

INSPECT IEEE

2nd IEEE INTERNATIONAL CONFERENCE ON
INTELLIGENT SIGNAL PROCESSING AND EFFECTIVE COMMUNICATION TECHNOLOGIES 2025

CERTIFICATE OF PRESENTATION

THIS CERTIFICATE IS PROUDLY AWARDED TO

VINUTHA N

FOR PRESENTING PAPER TITLED

ADVANCED VISION TRANSFORMER ENSEMBLE FOR AUTOMATED POLYCYSTIC OVARY SYNDROME CLASSIFICATION: A DEEP LEARNING APPROACH WITH GPU OPTIMISATION

AT THE **2ND IEEE INTERNATIONAL CONFERENCE ON INTELLIGENT SIGNAL PROCESSING AND EFFECTIVE COMMUNICATION TECHNOLOGIES 2025**,
HELD ON **07 - 08 NOVEMBER, 2025**, AT ABV-IIITM GWALIOR.

Dr. I.A. Ansari
Conference Chair

08.11.2025
DATE

Dr. Vinal Patel
Conference Chair

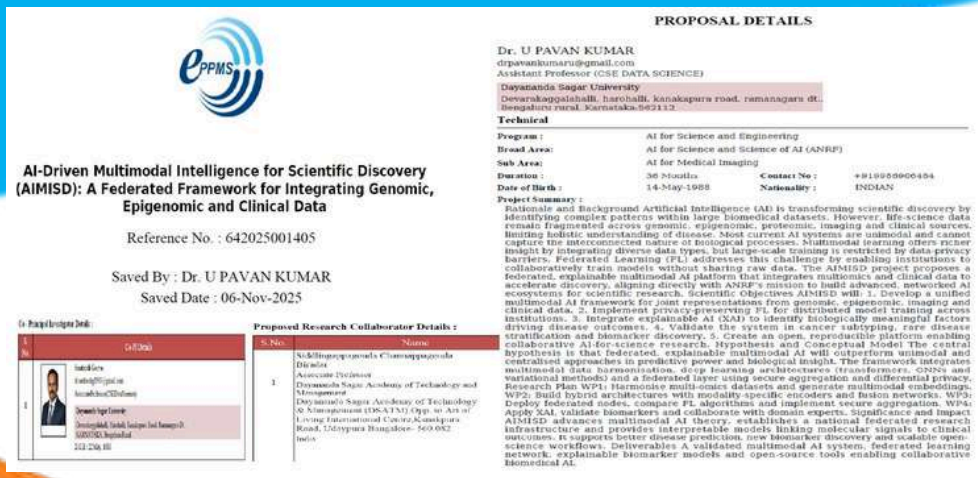
Dr. Shaila S. G
Professor and Chairperson
Department of CSE(DS)

- Dr. Shaila S. G., Professor and Chairperson of the Department of CSE (Data Science) at DSU, delivered an insightful Tech Talk titled “Insights of AI & DS.” The session was organized by the Department of Artificial Intelligence and Data Science at Sapthagiri NPS University.

Dr. U. Pavan Kumar
Assistant Professor
Department of CSE(DS)

Dr. Santhosh Kumar G
Associate Professor
Department of CSE(DS)

- Dr. U. Pavan Kumar and Dr. Santhosh Kumar G have submitted an ANRF research proposal titled “AI-Driven Multimodal Intelligence for Scientific Discovery (AIMISD): A Federated Framework for Integrating Genomic, Epigenomic, and Clinical Data” for AI for Science and Science of AI(ANRF) with a proposed funding amount of Rs. 74,12,840/-.



ePPMS

AI-Driven Multimodal Intelligence for Scientific Discovery (AIMISD): A Federated Framework for Integrating Genomic, Epigenomic and Clinical Data

Reference No. : 642025001405

Saved By : Dr. U PAVAN KUMAR
Saved Date : 06-Nov-2025

Proposed Research Collaborator Details :

S.No.	Name
1	Siddhiguppegowda Channappagowda Director Associate Professor Dayananda Sagar Academy of Technology and Management Dayananda Sagar Academy of Technology & Management (DSATM) Opp. to Art of Living International Centre,Kanakpura Road, Udayapura Bangalore- 560 082 India

PROPOSAL DETAILS

Dr. U PAVAN KUMAR
drpavankumaru@gmail.com
Assistant Professor (CSE DATA SCIENCE)
Dayananda Sagar University
Devarakaggalahalli, harohalli, kanakapura road, ramanagara dt, Bengaluru rural, Karnataka-562112

Technical

Program :	AI for Science and Engineering		
Broad Area:	AI for Science and Science of AI (ANRF)		
Sub Area:	AI for Medical Imaging		
Duration :	36 Months	**Contact No :**	+919986906484
Date of Birth :	14-May-1988	**Nationality :**	INDIAN

Project Summary :

Rationale and Background Artificial Intelligence (AI) is transforming scientific discovery by identifying complex patterns within large biomedical datasets. However, life-science data remain fragmented across genomic, epigenomic, proteomic, imaging and clinical sources, limiting holistic understanding of disease. Most current AI systems are unimodal and cannot capture the interconnected nature of biological processes. Multimodal learning offers richer insight by integrating diverse data types, but large-scale training is restricted by data-privacy barriers. Federated Learning (FL) addresses this challenge by enabling institutions to collaboratively train models without sharing raw data. The AIMISD project proposes a federated, explainable multimodal AI platform that integrates multiomics and clinical data to accelerate discovery, aligning directly with ANRF's mission to build advanced, networked AI ecosystems for scientific research. Scientific Objectives AIMISD will: 1. Develop a unified multimodal AI framework for joint representations from genomic, epigenomic, imaging and clinical data. 2. Implement privacy-preserving FL for distributed model training across institutions. 3. Integrate explainable AI (XAI) to identify biologically meaningful factors driving disease outcomes. 4. Validate the system in cancer subtyping, rare disease stratification and biomarker discovery. 5. Create an open, reproducible platform enabling collaborative AI-for-science research. Hypothesis and Conceptual Model The central hypothesis is that federated, explainable multimodal AI will outperform unimodal and centralised approaches in predictive power and biological insight. The framework integrates multimodal data harmonisation, deep learning architectures (transformers, GNNs and variational methods) and a federated layer using secure aggregation and differential privacy. Research Plan WP1: Harmonise multi-omics datasets and generate multimodal embeddings. WP2: Build hybrid architectures with modality-specific encoders and fusion networks. WP3: Deploy federated nodes, compare FL algorithms and implement secure aggregation. WP4: Apply XAI, validate biomarkers and collaborate with domain experts. Significance and Impact AIMISD advances multimodal AI theory, establishes a national federated research infrastructure and provides interpretable models linking molecular signals to clinical outcomes. It supports better disease prediction, new biomarker discovery and scalable open-science workflows. Deliverables A validated multimodal AI system, federated learning network, explainable biomarker models and open-source tools enabling collaborative biomedical AI.

Dr. Santhosh Kumar G
Associate Professor
Department of CSE(DS)

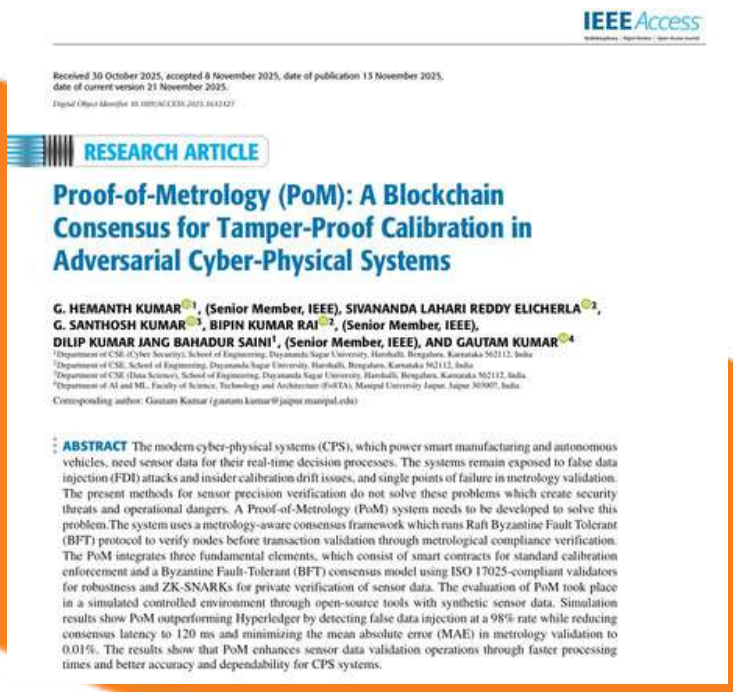
Dr. Dilip Kumar Jang Bahadur Saini
Associate Professor & Chairperson
Department of CSE(CY)

Dr. G. Hemanth Kumar
Associate Professor
Department of CSE(CY)

Dr. Bipin Kumar Rai
Professor & Associate Chair
Department of CSE

Dr. Sivananda Lahari Reddy
Associate Professor
Department of CSE

- Dr. Santhosh Kumar G., Dr. Dilip Kumar Jang Bahadur Saini, Dr. G. Hemanth Kumar, Dr. Bipin Kumar Rai, and Dr. Sivananda Lahari Reddy have published a Q1 research paper titled “Proof-of-Metrology (PoM): A Blockchain Consensus for Tamper-Proof Calibration in Adversarial Cyber-Physical Systems” in the IEEE Access journal, which has a high Impact Factor of 3.6.



IEEE Access

Received 30 October 2025, accepted 8 November 2025, date of publication 13 November 2025, date of current version 21 November 2025.

Digital Object Identifier 10.1109/ACCESS.2025.3632323

RESEARCH ARTICLE

Proof-of-Metrology (PoM): A Blockchain Consensus for Tamper-Proof Calibration in Adversarial Cyber-Physical Systems

G. HEMANTH KUMAR[1], (Senior Member, IEEE), SIVANANDA LAHARI REDDY ELICHERLA[2], G. SANTHOSH KUMAR[3], BIPIN KUMAR RAI[2], (Senior Member, IEEE), DILIP KUMAR JANG BAHADUR SAINI[1], (Senior Member, IEEE), AND GAUTAM KUMAR[4]

[1]Department of CSE (Cyber Security), School of Engineering, Dayananda Sagar University, Harohalli, Bengaluru, Karnataka 562112, India
[2]Department of CSE, School of Engineering, Dayananda Sagar University, Harohalli, Bengaluru, Karnataka 562112, India
[3]Department of CSE (Data Science), School of Engineering, Dayananda Sagar University, Harohalli, Bengaluru, Karnataka 562112, India
[4]Department of AI and ML, Faculty of Science, Technology and Architecture (FoSTA), Manipal University Jaipur, Jaipur 303007, India

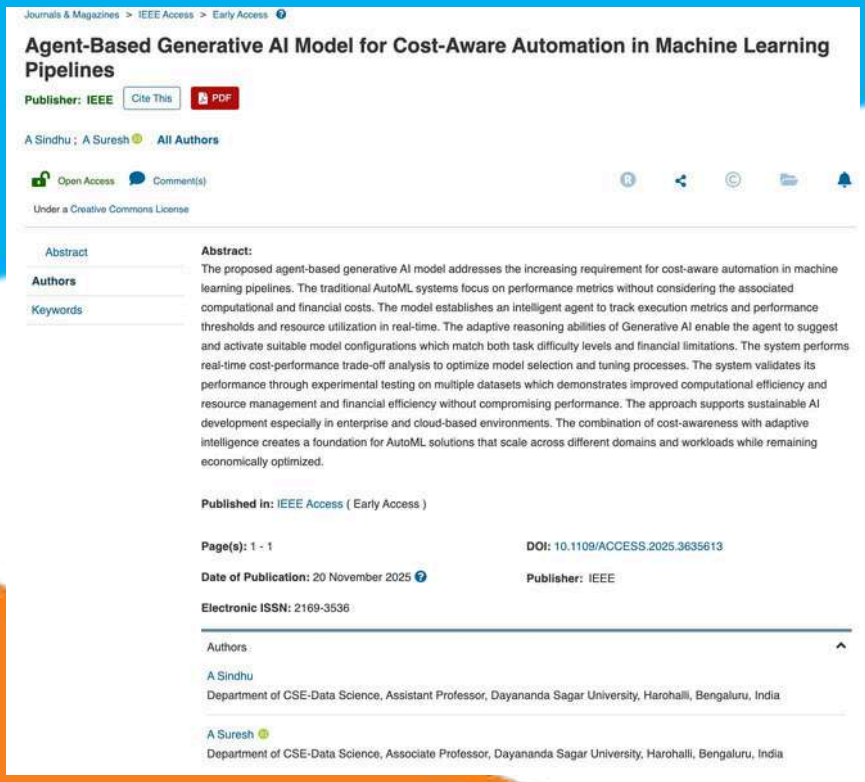
Corresponding author: Gautam Kumar (gautam.kumar@jaipur.manipal.edu)

ABSTRACT The modern cyber-physical systems (CPS), which power smart manufacturing and autonomous vehicles, need sensor data for their real-time decision processes. The systems remain exposed to false data injection (FDI) attacks and insider calibration drift issues, and single points of failure in metrology validation. The present methods for sensor precision verification do not solve these problems which create security threats and operational dangers. A Proof-of-Metrology (PoM) system needs to be developed to solve this problem.The system uses a metrology-aware consensus framework which runs Raft Byzantine Fault Tolerant (BFT) protocol to verify nodes before transaction validation through metrological compliance verification. The PoM integrates three fundamental elements, which consist of smart contracts for standard calibration enforcement and a Byzantine Fault-Tolerant (BFT) consensus model using ISO 17025-compliant validators for robustness and ZK-SNARKs for private verification of sensor data. The evaluation of PoM took place in a simulated controlled environment through open-source tools with synthetic sensor data. Simulation results show PoM outperforming Hyperledger by detecting false data injection at a 98% rate while reducing consensus latency to 120 ms and minimizing the mean absolute error (MAE) in metrology validation to 0.01%. The results show that PoM enhances sensor data validation operations through faster processing times and better accuracy and dependability for CPS systems.

Prof. Sindhu A
Assistant Professor
Department of CSE(DS)

Dr. Suresh Arumugam
Associate Professor
Department of CSE(DS)

- Prof. Sindhu A and Dr. Suresh Arumugam have published a paper titled "Agent-Based Generative AI Model for Cost-Aware Automation in Machine Learning Pipelines" in the journal " IEEE Access " that has a high Impact Factor of 3.6 & Country Rank (SJR) of Q1.



Journals & Magazines > IEEE Access > Early Access

Agent-Based Generative AI Model for Cost-Aware Automation in Machine Learning Pipelines

Publisher: IEEE | Cite This | PDF

A Sindhu ; A Suresh | All Authors

Open Access | Comment(s)

Under a Creative Commons License

Abstract
Authors
Keywords

Abstract:
The proposed agent-based generative AI model addresses the increasing requirement for cost-aware automation in machine learning pipelines. The traditional AutoML systems focus on performance metrics without considering the associated computational and financial costs. The model establishes an intelligent agent to track execution metrics and performance thresholds and resource utilization in real-time. The adaptive reasoning abilities of Generative AI enable the agent to suggest and activate suitable model configurations which match both task difficulty levels and financial limitations. The system performs real-time cost-performance trade-off analysis to optimize model selection and tuning processes. The system validates its performance through experimental testing on multiple datasets which demonstrates improved computational efficiency and resource management and financial efficiency without compromising performance. The approach supports sustainable AI development especially in enterprise and cloud-based environments. The combination of cost-awareness with adaptive intelligence creates a foundation for AutoML solutions that scale across different domains and workloads while remaining economically optimized.

Published in: IEEE Access (Early Access)

Page(s): 1 - 1
DOI: 10.1109/ACCESS.2025.3635613
Date of Publication: 20 November 2025
Publisher: IEEE
Electronic ISSN: 2169-3536

Authors

A Sindhu
Department of CSE-Data Science, Assistant Professor, Dayananda Sagar University, Harohalli, Bengaluru, India

A Suresh
Department of CSE-Data Science, Associate Professor, Dayananda Sagar University, Harohalli, Bengaluru, India

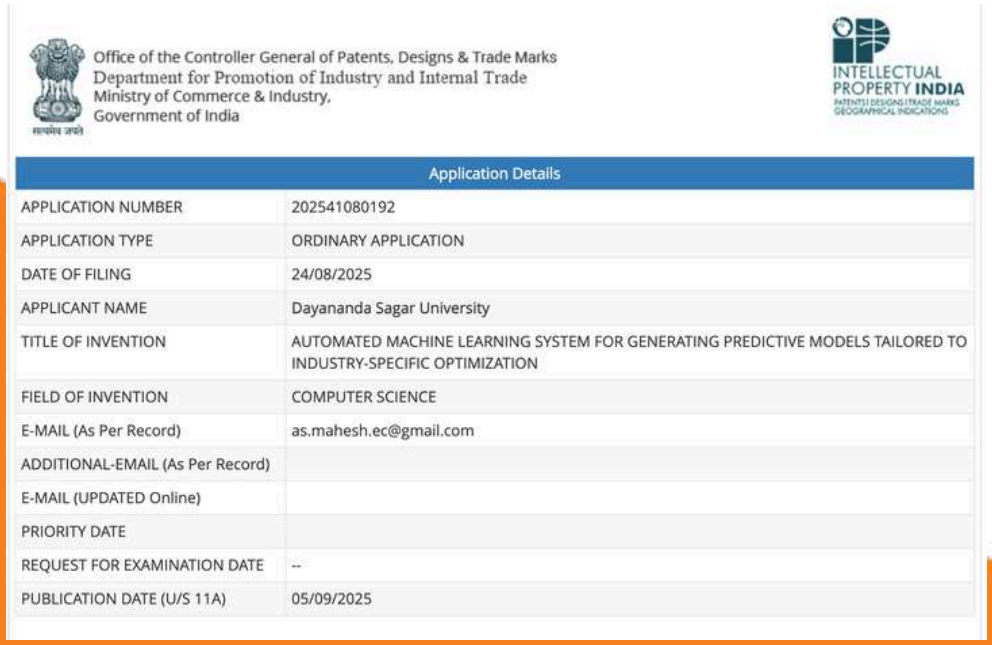
- Prof. Sindhu A and Dr. Suresh Arumugam have published a patent titled "A System And Method For Context-aware Sentiment Analysis Using Hierarchical Long Short-term Memory (Lstm) Networks" Application no: 202541074679 on 5/09/2025

Office of the Controller General of Patents, Designs & Trade Marks
Department for Promotion of Industry and Internal Trade
Ministry of Commerce & Industry,
Government of India

INTELLECTUAL PROPERTY INDIA

Application Details	
APPLICATION NUMBER	202541074679
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	06/08/2025
APPLICANT NAME	1 . Dr. Suresh A 2 . Dr. Saroja M. N 3 . Sindhu A 4 . Esakkiammal A 5 . Dayananda Sagar University
TITLE OF INVENTION	A SYSTEM AND METHOD FOR CONTEXT-AWARE SENTIMENT ANALYSIS USING HIERARCHICAL LONG SHORT-TERM MEMORY (LSTM) NETWORKS
FIELD OF INVENTION	COMPUTER SCIENCE
E-MAIL (As Per Record)	as.mahesh.ec@gmail.com
ADDITIONAL-EMAIL (As Per Record)	
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	--
PUBLICATION DATE (U/S 11A)	05/09/2025

- Prof. Sindhu A. and Dr. Suresh Arumugam have published a patent titled “Automated Machine Learning System For Generating Predictive Models Tailored To Industry-Specific Optimization” Application no: 202541080192 on 5/09/2025.



Office of the Controller General of Patents, Designs & Trade Marks
Department for Promotion of Industry and Internal Trade
Ministry of Commerce & Industry,
Government of India

INTELLECTUAL PROPERTY INDIA

Application Details	
APPLICATION NUMBER	202541080192
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	24/08/2025
APPLICANT NAME	Dayananda Sagar University
TITLE OF INVENTION	AUTOMATED MACHINE LEARNING SYSTEM FOR GENERATING PREDICTIVE MODELS TAILORED TO INDUSTRY-SPECIFIC OPTIMIZATION
FIELD OF INVENTION	COMPUTER SCIENCE
E-MAIL (As Per Record)	as.mahesh.ec@gmail.com
ADDITIONAL-EMAIL (As Per Record)	
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	--
PUBLICATION DATE (U/S 11A)	05/09/2025

Dr. U. Pavan Kumar
Assistant Professor
Department of CSE(DS)

- Dr. U Pavan Kumar served as a Review Committee Member for ACDSA 2026, the International Conference on Artificial Intelligence, Computer, Data Sciences, and Applications, on 19 November 2025, by the Conference Chair, Josephine Bernadette Benjamin.

ACDSA ANTALYA BİLİM UNIVERSITY IEEE

Certificate of Reviewing

This is to certify that

Pavan Kumar U

has served as a Review Committee Member for the International Conference on Artificial Intelligence, Computer, Data Sciences and Applications (ACDSA 2026)

and reviewed 1 (one) paper successfully. We express our gratitude for the time, expertise, and dedication shown toward ensuring high-quality conference proceedings.

Josephine Bernadette Benjamin
University of Santo Tomas, Philippines
ACDSA 2026 Conference Chair
19 November 2025

Prof. Shivamma D
Assistant Professor
Department of CSE(DS)

- Prof. Shivamma D, Assistant Professor, Department of CSE (Data Science), School of Engineering, Dayananda Sagar University, was invited as a Resource Person to deliver a session on “Empowering Intelligence with Data Science and Machine Learning” on 15th November 2025 during the Induction Program 2025 at Dayananda Sagar College of Arts, Science & Commerce. She engaged MCA students with real-world applications, emerging trends, and career opportunities in AI and ML, making the session highly insightful and inspiring.

Prof. Benaka Santhosha S
Assistant Professor
Department of CSE

- Prof. Benaka Santhosha S, Assistant Professor, Department of CSE, has successfully defended his Final Ph.D Viva Voice on the research work titled " Enhancing Image Security through Encryption methods" under the guidance of Dr. Sudheesh K V, Professor, Vidya Vardhaka College of Engineering, Mysore, affiliated to Visvesvaraya Technological University, Belagavi, on 3rd November 2025.

Dr. Ramesh S
Professor
Department of CSE

- Dr. S. Ramesh, Professor, Department of CSE, has been awarded the title of “Kalpa Acharya” for his remarkable achievements and contributions at the Bharat Education Excellence Awards (BEEA) on 8th November 2025. The event was graced and presided over by Dr. Buddha Chandrasekhar, Chief Coordinating Officer, AICTE, Ministry of Education, Government of India, and CEO of Anuvadini AI.

www.nature.com/scientificreports

scientific reports

OPEN

A quantum-driven multi-stage framework integrating variational entanglement, reinforcement learning, and federated explainability for climate-resilient farming

CERTIFICATE
AWARD OF
Kalpa Acharya

Dr. S. Ramesh

Dayananda Sagar University

Recognising Exemplary Contribution of Research & Education Sector

BHARAT EDUCATION EXCELLENCE AWARDS

BHARAT EDUCATION EXCELLENCE AWARDS

2025

Edition - 5th

BRAIN O VISION

AWARD ID: NOM-BEEA25-2007

Prof. Bharath B
Assistant Professor
Department of CSE

- Prof. Bharath B, Assistant Professor, Department of CSE, has successfully presented the paper titled “Real-Time Public Transport Tracking for Small Cities: An IoT and AI-based Approach” at the 5th International Conference on Evolutionary Computing and Mobile Sustainable Networks (ICECMSN 2025) organized by the Department of Information Technology, Hindusthan Institute of Technology, Coimbatore, India, on 24–26 November 2025.

Hindusthan Institute of Technology ICECMSN IEEE

Certificate of Presentation

This certificate is presented to

Bharath B

for the paper titled

Real-Time Public Transport Tracking for Small Cities: An IoT and AI-based Approach

presented at the 5th International Conference on Evolutionary Computing and Mobile Sustainable Networks (ICECMSN 2025) organized by Department of Information Technology, Hindusthan Institute of Technology, Coimbatore, India on 24-26 November 2025. Your contribution and active involvement have made this event a success.

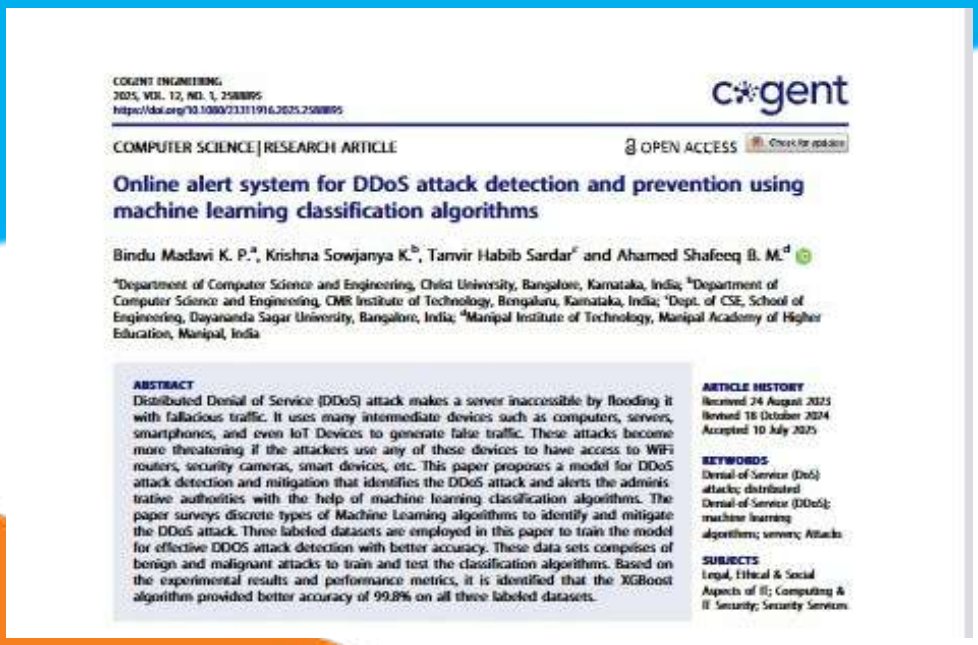
Session Chair — Dr. M. Duraipandian, Conference Chair — Dr. C. Natarajan, Principal

Dr. Arunkumar Gopu
Associate Professor & Assistant Dean (R&I)
Department of CSE

- Dr Arunkumar Gopu, Associate Professor, Department of CSE, is delighted to be a Special Invitee at Ph.D. Edits Conference Session, a wonderful initiative by Ph.D. scholars, for Ph.D. scholars, fostering collaboration and knowledge exchange. Organised by the IEEE Communications Society, Bangalore chapter, on 12th November 2025.

Dr Tanvir Habib Sardar
Associate Professor
Department of CSE

- Dr. Tanvir Habib Sardar, Associate Professor, Department of CSE, published a research article titled “Online Alert System for DDoS Attack Detection and Prevention Using Machine Learning Classification Algorithms” in Cogent Engineering, a Taylor and Francis Q2 journal, on 18 November 2025.



COGENT ENGINEERING
2025, VOL. 12, NO. 1, 2588895
https://doi.org/10.1080/23311916.2025.2588895

cogent

COMPUTER SCIENCE | RESEARCH ARTICLE

OPEN ACCESS

Online alert system for DDoS attack detection and prevention using machine learning classification algorithms

Bindu Madavi K. P.[a], Krishna Sowjanya K.[b], Tanvir Habib Sardar[c] and Ahamed Shafeeq B. M.[d]

[a]Department of Computer Science and Engineering, Christ University, Bangalore, Karnataka, India; [b]Department of Computer Science and Engineering, CMR Institute of Technology, Bengaluru, Karnataka, India; [c]Dept. of CSE, School of Engineering, Dayananda Sagar University, Bangalore, India; [d]Manipal Institute of Technology, Manipal Academy of Higher Education, Manipal, India

ABSTRACT

Distributed Denial of Service (DDoS) attack makes a server inaccessible by flooding it with fallacious traffic. It uses many intermediate devices such as computers, servers, smartphones, and even IoT Devices to generate false traffic. These attacks become more threatening if the attackers use any of these devices to have access to WiFi routers, security cameras, smart devices, etc. This paper proposes a model for DDoS attack detection and mitigation that identifies the DDoS attack and alerts the administrative authorities with the help of machine learning classification algorithms. The paper surveys discrete types of Machine Learning algorithms to identify and mitigate the DDoS attack. Three labeled datasets are employed in this paper to train the model for effective DDOS attack detection with better accuracy. These data sets comprises of benign and malignant attacks to train and test the classification algorithms. Based on the experimental results and performance metrics, it is identified that the XGBoost algorithm provided better accuracy of 99.8% on all three labeled datasets.

ARTICLE HISTORY
Received 24 August 2025
Revised 18 October 2024
Accepted 10 July 2025

KEYWORDS
Denial of Service (DoS) attacks; distributed Denial of Service (DDoS); machine learning algorithms; servers; Attacks

SUBJECTS
Legal, Ethical & Social Aspects of IS; Computing & IT Security; Security Services

Dr. Revathi V
Associate Professor & Associate Chair
Department of CSE

Dr. George Fernandez I
Associate Professor
Department of CSE

- Dr. Revathi V and Dr. George Fernandez I, Associate Professors, Department of CSE are Contributed as reviewer for the papers submitted to the International Conference on “Intelligent Systems for Pioneering Innovation in Robotics and Electric Mobility”- INSPIRE 2025 (IEEE Conference #67328) organized by Mangalore Institute of Technology & Engineering, Moodabidri, India, on 20 & 21 November, 2025.


MANGALORE INSTITUTE OF TECHNOLOGY & ENGINEERING

MITE IEEE Mangalore Subsection

IEEE Mangalore Subsection (R0011901)

INTERNATIONAL CONFERENCE ON INTELLIGENT SYSTEMS FOR PIONEERING INNOVATION IN ROBOTICS AND ELECTRIC MOBILITY - INSPIRE 2025 (IEEE CONFERENCE #67328)

CERTIFICATE OF APPRECIATION

Dr. Revathi Vaithiyanathan

has reviewed the papers submitted to the International Conference on "Intelligent Systems for Pioneering Innovation in Robotics and Electric Mobility"- INSPIRE 2025 (IEEE Conference #67328) organized by Mangalore Institute of Technology & Engineering, Moodabidri, India, on 20th & 21st November, 2025.

Dr. Anushree Raj, MITE, Moodabidri, Organising Chair, IEEE INSPIRE 2025
Dr. Vinayambika S Bhat, MITE, Moodabidri, Organising Chair, IEEE INSPIRE 2025
Dr. S V Sathyanarayana, Chair, IEEE Mangalore Subsection, General Chair, IEEE INSPIRE 2025
Dr. Prashanth C M, Principal, MITE, Moodabidri, General Chair, IEEE INSPIRE 2025


MANGALORE INSTITUTE OF TECHNOLOGY & ENGINEERING

MITE IEEE Mangalore Subsection

IEEE Mangalore Subsection (R0011901)

INTERNATIONAL CONFERENCE ON INTELLIGENT SYSTEMS FOR PIONEERING INNOVATION IN ROBOTICS AND ELECTRIC MOBILITY - INSPIRE 2025 (IEEE CONFERENCE #67328)

CERTIFICATE OF APPRECIATION

Dr. George Fernandez

has reviewed the papers submitted to the International Conference on "Intelligent Systems for Pioneering Innovation in Robotics and Electric Mobility"- INSPIRE 2025 (IEEE Conference #67328) organized by Mangalore Institute of Technology & Engineering, Moodabidri, India, on 20th & 21st November, 2025.

Dr. Anushree Raj, MITE, Moodabidri, Organising Chair, IEEE INSPIRE 2025
Dr. Vinayambika S Bhat, MITE, Moodabidri, Organising Chair, IEEE INSPIRE 2025
Dr. S V Sathyanarayana, Chair, IEEE Mangalore Subsection, General Chair, IEEE INSPIRE 2025
Dr. Prashanth C M, Principal, MITE, Moodabidri, General Chair, IEEE INSPIRE 2025

Dr. George Fernandez I
Associate Professor
Department of CSE

- Dr George Fernandez I, Associate Professor, Department of CSE, served as a Reviewer for 1 manuscript at the European Journal of Computer Sciences and Informatics on 20th November 2025.

Certificate of Reviewing

This Certificate is awarded to

Dr George Fernandez

FOR SERVING AS A REVIEWER FOR

European Journal Of Computer Sciences And Informatics

We are grateful to Dr George Fernandez for reviewing 1 manuscript in 2025.

Date of Certificate
November 20, 2025

eJManager.com
Manager

Dr. Damodharan D
Assistant Professor
Department of CSE

- Dr. Damodharan D, Assistant Professor, Department of CSE, for sharing his valuable knowledge on the theme “Quantum Computing: The Next Frontier in Computation” as Resource Person during the Faculty Development Program on Frontiers of Quantum Computing: Innovations and Applications in Contemporary Science and Engineering which took Place on 3rd Nov 2025 at Annamacharya Institute of Technology and science Kadapa DIST, AP.

Dr. Prabhakar M
Professor
Department of CSE

- Dr. Prabhakar. M, Professor, Department of CSE, published an IEEE paper titled “Implementing Blockchain Technology in Intelligent Sensor Networks for Enhanced Data Integrity,” which was presented at the 2025 International Conference on Intelligent Communication Networks and Computational Techniques (ICICNCT) in Bidar, India, on 18th November 2025.

2025 International Conference on Intelligent Communication Networks and Computational Techniques (ICICNCT)

Implementing Blockchain Technology in Intelligent Sensor Networks for Enhanced Data Integrity

1st Shubhi Srivastava
Department of Information Science and Engineering
New Horizon College of Engineering
Bengaluru, India
srivastavashubhi06@gmail.com

2nd Prabhakar. M
Department of Computer Science and Engineering
Dayananda Sagar University
Bengaluru, India
prabhakar.m-cse@dsu.edu.in

3rd Sudheendra Moulı. H. C
Department of Computer Application
GSSS Sinha Subbamahalakshmi First Grade College
Mysuru, India
hcsm.kashyap28@gmail.com

4th Abdul Latif Saleem
Department of Computer Science and Engineering
Vidyavardhaka College of Engineering
Mysuru, India
abdellatif@vvce.ac.in

5th Swapnil. M. Parikh
Department of Computer science and Engineering
Faculty of Engineering and Technology
Parul institute of Technology
Parul University
Post Limda, India
swapnil.parikh17761@paruluniversity.ac.in

6th Karuna Pandit
Department of Information Science and Engineering
NMAM Institute of Technology (NMAMIT)
Nitte (Deemed to be University)
Karkal, India
karunapandit@nitte.edu.in

***Abstract*—The Internet has grown in importance and impact over the years, causing people to become more reliant on it. The Internet has evolved into a major vector for cybercrime because to its ever-increasing user base. Over the last decade, the number of these computing systems—including desktops, laptops, smartphones, and the Internet of Things (IoT)—has skyrocketed. Among them, cell phones are practically integral to modern life. The popularity of web-based assaults has skyrocketed with the exponential growth in the number of individuals using the Internet. These web-based assaults are increasingly being combatted by security corporations. Unfortunately, new forms of these assaults are appearing all the time, making it hard for older security measures to stay up. Artificial intelligence (AI) is a source of optimism in the current cybersecurity landscape, offering a potential solution to the ever-changing digital dangers. The fast development of AI over the last decade has given rise to this optimism, because it is now impacting the expansion of every industry. With AI bringing so many advantages in every field, online security is one sector that just cannot afford to ignore it. This planned effort's work represents an advance in that direction. Critical online security issues have been the focus of this proposed work's study, which aims to address these issues using AI. Web security issues for desktop and mobile devices have been addressed in the proposed work. The planned work's contributions to online security are as follows: The 'MalCrawler' web crawler is a targeted tool for finding and exploring the web. This crawler makes it easy to gather websites, particularly ones that are harmful. It does a better job of collecting dangerous websites than a typical crawler. Additionally, it is built to circumvent the evasion strategies used by rogue websites. The crawler's ability to gather webpages—particularly dangerous ones—in order to provide datasets for ML-based analysis and solutions makes it a substantial addition to online security. Provides an in-depth examination of characteristics that may be used to categorize harmful websites. Data gain, pre-processing resource consumption, and prediction performance with various Conventional ML methods are some of the metrics used to assess these qualities. In addition, it suggests other conventional ML-based algorithms to better accurately anticipate dangerous websites by using these properties.**

Keywords*—*blockchain technology, intelligent sensor networks (ISNS), data integrity, tamper-proof storage, smart contracts, secure data transmission, decentralized framework.

I. Introduction

The escalating sophistication of cyberattacks has highlighted the critical need for robust and innovative cybersecurity measures. As organizations increasingly rely on data to detect, predict, and mitigate threats, the quality and quantity of training data become pivotal to the success of cybersecurity systems. However, access to real-world cybersecurity data is often restricted due to privacy concerns, data scarcity, and the evolving nature of threats. These challenges hinder the development and testing of advanced machine learning models tailored for cybersecurity applications [1][2].

Generative Adversarial Networks (GANs), first introduced by Goodfellow et al., have emerged as a groundbreaking solution for synthetic data generation. By leveraging the adversarial interplay between a generator and a discriminator, GANs can create realistic data samples indistinguishable from genuine datasets. This capability is particularly valuable in cybersecurity, where generating synthetic data to simulate attack patterns, malware behaviors, and normal network activities can enhance the robustness and adaptability of machine learning models [3][4].

The integration of GANs into cybersecurity applications addresses multiple challenges. GANs can simulate diverse and evolving cyber threats, enabling systems to adapt to previously unseen attack vectors. Additionally, synthetic data generated by GANs alleviates the dependency on proprietary datasets, facilitating broader collaboration and experimentation among researchers and organizations. Recent advancements in conditional GANs (cGANs) and auxiliary classifier GANs (AC-GANs) have further enhanced the utility of GANs in generating targeted synthetic data for specific cybersecurity scenarios, such as phishing detection and intrusion prevention [5][6].

However, the adoption of GANs in cybersecurity is not without challenges. Issues such as mode collapse, data quality assurance, and potential adversarial misuse must be addressed to maximize their effectiveness. Moreover, ensuring the privacy and security of the synthetic data itself is paramount, particularly when dealing with sensitive information [7][8].

2025 International Conference on Intelligent Communication Networks and Computational Techniques (ICICNCT) | 979-8-3315-8623-2/25/$31.00 ©2025 IEEE | DOI: 10.1109/ICICNCT66124.2025.11252956

Dr. Santhosh Kumar J
Associate Professor
Department of CST

Dr. J. Sebastian Nixon
Professor
Department of CSE

Dr. Girisha G S
Professor & Chairperson
Department of CSE

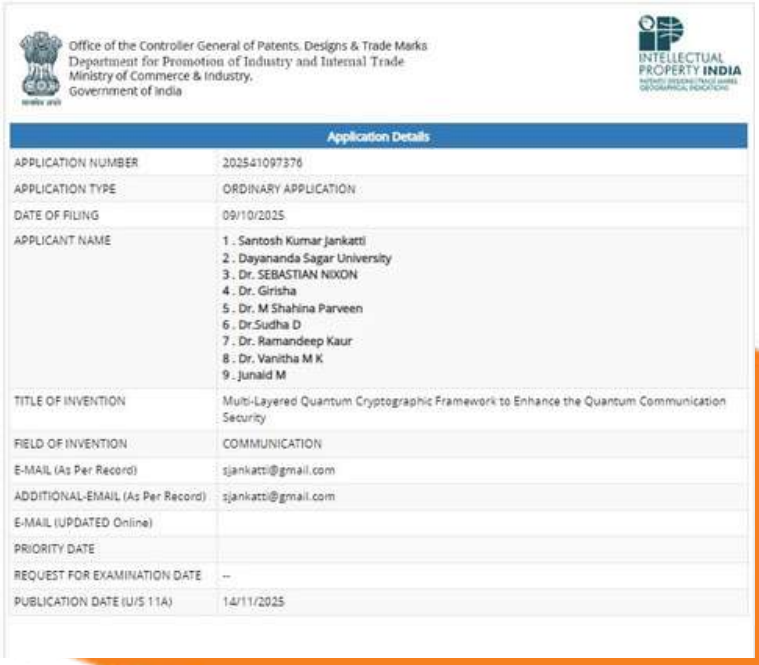
Dr. M Shahina Parveen
Professor & Chairperson
Department of CST

Dr. Sudha D
Associate Professor
Department of CST

Dr. Ramandeep Kaur
Assistant Professor
Department of CST

Prof. Junaid M P
Assistant Professor
Department of CST

- Dr. Santhosh Kumar J, Dr. J. Sebastian Nixon, Dr. Girisha G S, Dr. M Shahina Parveen, Dr. Sudha D, Dr. Ramandeep Kaur, and Prof. Junaid Mundichipparakkal published an Indian Patent titled “Multi-Layered Quantum Cryptographic Framework to Enhance the Quantum Communication Security” in the field of Communication with the application no 202541097376 during 14/11/2025.



Office of the Controller General of Patents, Designs & Trade Marks
Department for Promotion of Industry and Internal Trade
Ministry of Commerce & Industry,
Government of India

INTELLECTUAL PROPERTY INDIA

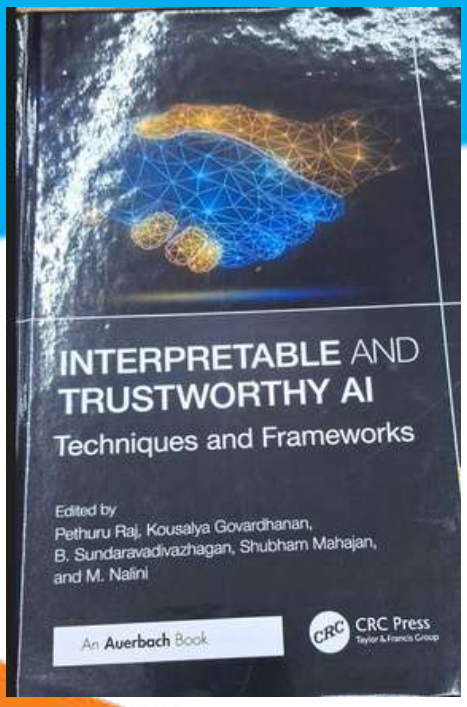
Application Details	
APPLICATION NUMBER	202541097376
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	09/10/2025
APPLICANT NAME	1 . Santosh Kumar Jankatti 2 . Dayananda Sagar University 3 . Dr. SEBASTIAN NIXON 4 . Dr. Girisha 5 . Dr. M Shahina Parveen 6 . Dr.Sudha D 7 . Dr. Ramandeep Kaur 8 . Dr. Vanitha M K 9 . Junaid M
TITLE OF INVENTION	Multi-Layered Quantum Cryptographic Framework to Enhance the Quantum Communication Security
FIELD OF INVENTION	COMMUNICATION
E-MAIL (As Per Record)	sjankatti@gmail.com
ADDITIONAL-EMAIL (As Per Record)	sjankatti@gmail.com
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	--
PUBLICATION DATE (U/S 11A)	14/11/2025

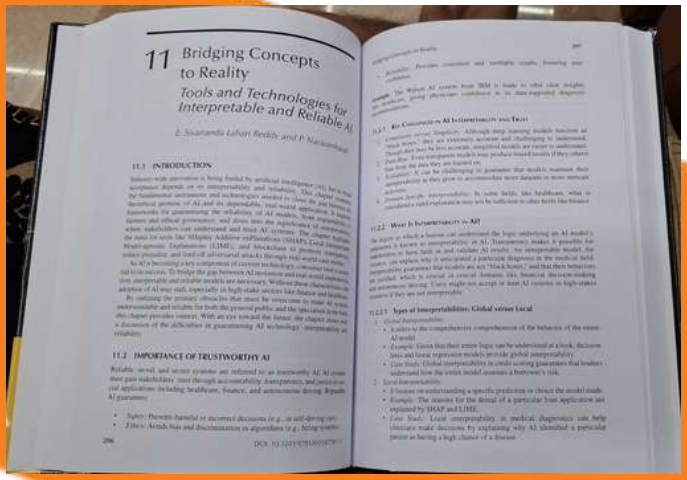
Dr. Naitik S T
Assistant Professor
Department of CSE

- Dr. Naitik ST, Assistant Professor, Department of CSE, has been awarded an Elsevier Certificate of Reviewing in the journal Advances in Biomarker Sciences and Technology for 1 review during November 2025.

Dr. Sivananda Reddy
Associate Professor
Department of CSE

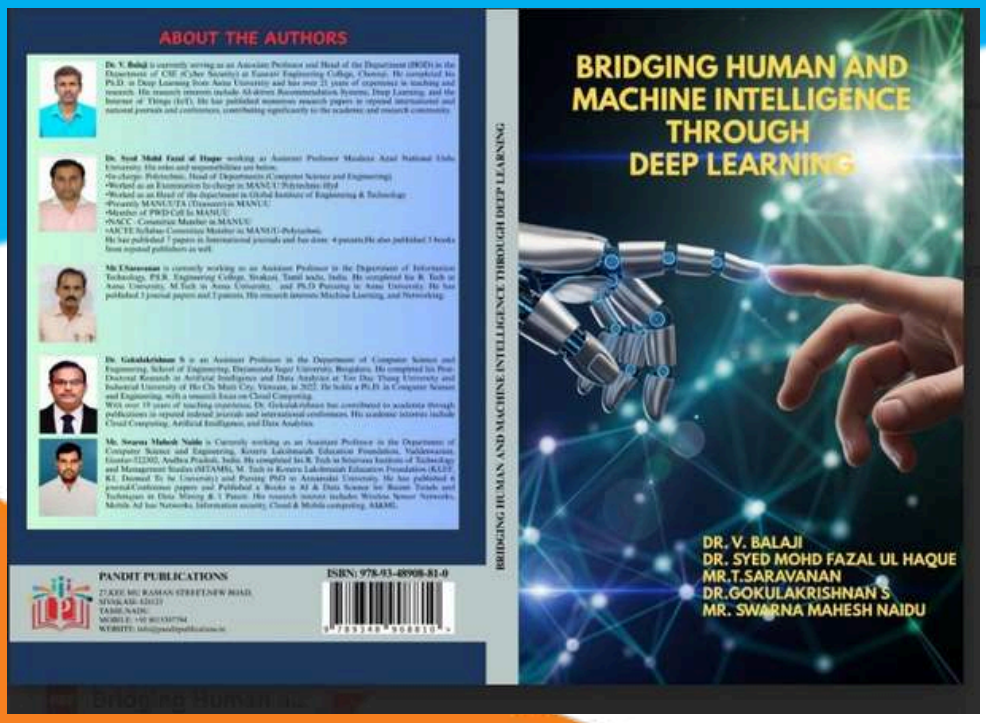
- Dr. Sivananda Lahari Reddy, Associate Professor, Department of CSE, has published a book chapter titled " Bridging Concepts to Reality" in the CRC Press (Taylor & Francis Group) with the book titled - Interpretable and Trustworthy AI in November 2025.





Dr.Gokulakrishnan S
Assistant Professor
Department of CSE

- Dr. Gokulakrishnan S, Assistant Professor, Department of CSE, published a co-authored book titled “Bridging Human and Machine Intelligence Through Deep Learning” by Pandit Publications. at Sivakasi, Tamil Nadu, with the ISBN 978-93-48908-81-0 during November 2025.



Dr. Santhosh Kumar J
Associate Professor
Department of CST

Prof. Bharath M B
Assistant Professor
Department of CSE

Prof. Mala B A
Assistant Professor
Department of CSE

- Dr. Santhosh Kumar J, Associate Professor, Department of CST, Prof. Bharath M B, and Prof. Mala B A, Assistant Professors, Department of CSE, have successfully published an Indian Patent titled “Secure Transaction Protocol for Payments Without Internet Connectivity” in the field of Electronics with the application no 202541110200 during 28/11/2025.

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :12/11/2025

(21) Application No.202541110200 A
(43) Publication Date : 28/11/2025

(54) Title of the invention : Secure Transaction Protocol for Payments Without Internet Connectivity

(51) International classification	:H03H 7/30, H03H 11/26, A61B 5/273, H02K 15/33, H03H 9/30	(71)**Name of Applicant :** **1)Santosh Kumar Jankatti** Address of Applicant :dsu cst Karnataka India **2)Dayananda Sagar University** **3)BMS Institute of Technology & Management** (72)**Name of Inventor :** **1)Prof. Bharath M B** **2)Prof. Ashwini S S** **3)Prof. Pavithra G** **4)Prof. Mala B A** **5)Prof. Salma Itagi** **6)Prof. Hamsaveni M** **7)Prof. Bhagyashree P Pujeri** **8)Prof. Syed Matheen Pasha**
(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 :
In today’s growing digital economy, online payment systems such as UPI and card-based transactions have become essential for financial inclusion. However, in many parts of India and other developing regions, network connectivity remains unreliable, leading to failed or delayed payments. This invention introduces a Secure Transaction Protocol for Payments Without Internet Connectivity, designed to enable safe, real-time digital transactions even in offline environments. The proposed system uses Bluetooth and NFC-based encrypted token exchange between payer and receiver devices, eliminating the dependency on continuous internet access. Each transaction is assigned a unique cryptographic token that stores essential details and is later verified once the network becomes available, ensuring both authenticity and traceability. To further enhance trust, the protocol supports optional biometric or PIN-based user validation before transaction confirmation. The solution integrates seamlessly with existing banking infrastructure and digital wallets, allowing easy adoption in rural, disaster-prone, and low-connectivity areas. By combining lightweight encryption, offline data validation, and delayed blockchain verification, the invention ensures fast, secure, and inclusive financial access. This self-reliant payment mechanism empowers users to perform digital transactions anytime, anywhere—bridging the last-mile connectivity gap in India’s digital finance ecosystem.
No. of Pages : 17 No. of Claims : 8

Dr. Naitik S T
Assistant Professor
Department of CSE

Dr. George Fernandez I
Associate Professor
Department of CSE

- Dr. Naitik ST, Assistant Professor and Dr. George Fernandez Associate Professor, Department of CSE contributed as a Reviewers, during the IEEE International Conference on Electrical, Electronics and Computer Science with Advance Power Technologies – A Future Trend (ICE2CPT 2025), organized by the Department of Electrical Engineering, National Institute of Technology Jamshedpur, in association with the IEEE Kolkata Section, IEEE Industrial Electronics Society and IEEE Student Branch, NIT Jamshedpur, held from 29th to 31st October 2025.

Certificate No. NITJSR/ICE2CPT-2025/RC-465

2025 IEEE INTERNATIONAL CONFERENCE ON ELECTRICAL, ELECTRONICS AND COMPUTER SCIENCE WITH ADVANCE POWER TECHNOLOGIES - A FUTURE TREND

(ICE2CPT 2025)

29-31 October, 2025

National Institute of Technology Jamshedpur, Jharkhand, India

Certificate of Appreciation

This is proudly presented to Mr./Ms./Dr. George Fernandez of Dayananda Sagar University in recognition of your valuable contribution as a Reviewer, during the IEEE International Conference on Electrical, Electronics and Computer Science with Advance Power Technologies – A Future Trend (ICE2CPT 2025), organized by the Department of Electrical Engineering, National Institute of Technology Jamshedpur, in association with the IEEE Kolkata Section, IEEE Industrial Electronics Society and IEEE Student Branch, NIT Jamshedpur, held from 29th to 31st October 2025.

Prof. P. Sanjeevikumar, General Chair, ICE2CPT 2025 | Dr. Veerpratap Meena, General Chair, ICE2CPT 2025 | Prof. Prabha Chand, Organizing Chair, ICE2CPT 2025 | Dr. Kumari Namrata, Organizing Chair, ICE2CPT 2025

Certificate No. NITJSR/ICE2CPT-2025/RC-476

2025 IEEE INTERNATIONAL CONFERENCE ON ELECTRICAL, ELECTRONICS AND COMPUTER SCIENCE WITH ADVANCE POWER TECHNOLOGIES - A FUTURE TREND

(ICE2CPT 2025)

29-31 October, 2025

National Institute of Technology Jamshedpur, Jharkhand, India

Certificate of Appreciation

This is proudly presented to Mr./Ms./Dr. Naitik ST of DSU in recognition of your valuable contribution as a Reviewer, during the IEEE International Conference on Electrical, Electronics and Computer Science with Advance Power Technologies – A Future Trend (ICE2CPT 2025), organized by the Department of Electrical Engineering, National Institute of Technology Jamshedpur, in association with the IEEE Kolkata Section, IEEE Industrial Electronics Society and IEEE Student Branch, NIT Jamshedpur, held from 29th to 31st October 2025.

Prof. P. Sanjeevikumar, General Chair, ICE2CPT 2025 | Dr. Veerpratap Meena, General Chair, ICE2CPT 2025 | Prof. Prabha Chand, Organizing Chair, ICE2CPT 2025 | Dr. Kumari Namrata, Organizing Chair, ICE2CPT 2025

Dr. Savitha Hiremath
Associate Professor
Department of CSE

- Dr. Savitha Hiremath, Associate Professor in the Department of CSE, School of Engineering, Dayananda Sagar University Served as a resource person for one-day hands-on workshop titled “Write Smart, Present Better – A LaTeX Workshop” on Wednesday, 05 November 2025, from 9:00 AM to 4:00 PM organized by the Department of Computer Science and Business Systems at Dayananda Sagar College of Engineering.

Dr. N. Bharathiraja
Associate Professor
Department of CSE

- Dr N. Bharathiraja, Associate Professor, Department of CSE, has successfully published a research paper titled “Enhancing environmental sustainability through real-time bio-waste detection using YOLOv6-CSP and relevance vector machine for improved waste management” in the Journal Measurement, by the Publisher Elsevier, SCIE/Scopus Indexed - Q1, Impact Factor:5.6, during November 2025.

Scopus

Back

Enhancing environmental sustainability through real-time bio-waste detection using YOLOv6-CSP and relevance vector machine for improved waste management

Measurement: Journal of the International Measurement Confederation • Article • 2026 • DOI: 10.1016/j.measurement.2025.119370

Nagu, Bharathiraja[a] ; Bansal, Shanak[b] ; Iqbal Faruque, Mohammad Rashed[c] ; Al-mugren K.S.[d]

[a] Department of Computer Science and Engineering, School of Engineering, Dayananda Sagar University, Karnataka, Bangalore, 562112, India

Show all information

0
Citations

Full text Export Save to list

Document Impact Cited by (0) References (41) Similar documents

Abstract

Effective bio-waste management is critical for environmental sustainability, yet existing detection systems often struggle with limited accuracy, slow processing, and poor adaptability to diverse environments. This study presents a novel framework combining the YOLOv6-CSP (Cross-Stage Partial) network with a Relevance Vector Machine (RVM) to address these challenges. YOLOv6-CSP is optimized for real-time object detection, capable of handling complex bio-waste images with high speed and accuracy, while RVM enhances classification precision by reducing misclassifications and improving robustness across different waste categories. A custom-built bio-waste dataset is used to train and evaluate the system, capturing various types and conditions of waste. Experimental results demonstrate substantial improvements in both detection speed and classification performance compared to conventional approaches. In particular, the integrated system is able to operate

- Dr N. Bharathiraja, Associate Professor, Department of CSE, has successfully published a research paper titled “Enhancing Road Safety Through Wearable Sensor Technology and Explainable Artificial Intelligence: A Novel Approach To Cognitive Load Monitoring in Driving” in the International Journal of Intelligent Transportation Systems Research, 1-24.by the Publisher Springer, WOS/Scopus Indexed - Q2 Journal during November 2025.

Enhancing Road Safety Through Wearable Sensor Technology and Explainable Artificial Intelligence: A Novel Approach To Cognitive Load Monitoring in Driving

International Journal of Intelligent Transportation Systems Research • Article • 2025 • DOI: 10.1007/s13177-025-00345-1

Nova, Bharathiraja[1] ; Subramanian, Sellakumar[1] ; Tiwari, Rai Gaurang[1] ; Solau, Ayodeji Oloniruha[2,3]

[1]Department of Computer Science and Engineering, School of Engineering, Dayananda Sagar University, Karnataka, Bangalore, 562112, India

Show all information

0 Citations

Full text • Export • Save to list

Document | Impact | Cited by (0) | References (41) | Similar documents

Abstract

Innovative wearable neurotechnology offers new methods to enhance user capabilities and provide insights into cognitive processes. These brain-computer interfaces, increasingly accessible, have the potential to become commonplace, necessitating proactive consideration of their societal and sector-specific impacts—including traffic and transportation. However, their development presents two major risks: potential misuse of cognitive data and challenges in user trust and acceptance. This paper proposes a novel approach to improve road safety through the integration of wearable sensor technology and Explainable Artificial Intelligence (XAI). The primary goal is to monitor drivers' cognitive load in real-time to mitigate the dangers of distracted driving. Wearable sensors, such as EEG headbands and heart rate monitors, continuously capture physiological signals, which are then processed using advanced machine learning algorithms, including XAI models, to yield interpretable

- Dr N. Bharathiraja, Associate Professor, Department of CSE, has successfully published a research paper titled “Development of Hybrid Explainable Artificial Intelligence With Swin Vision Transformer Intrusion Detection for Securing VANETs From Attacks” in the Wiley publications Q2 journal named Transactions on Emerging Telecommunications Technologies, during November 2025

Development of Hybrid Explainable Artificial Intelligence With Swin Vision Transformer Intrusion Detection for Securing VANETs From Attacks

Bharathiraja N[1] | M. S. Mitra[2] | Richa Vijay[3] | M. Rajalakshmi[4] | Pellakuri Vidyullatha[5] | K. Balamurugan[6]

[1]Department of Computer Science and Engineering, School of Engineering, Dayananda Sagar University, Bangalore, India | [2]Department of Computer Science and Engineering, SRM Institute of Science and Technology, Kattankulathur, Chennai, Tamil Nadu, India | [3]School of Computer Science and Engineering, SGM University, Greater Noida, India | [4]Department of Information Technology, Sagore Engineering College, Chennai, India | [5]Department of Computer Science and Engineering, Koneru Lakshmaiah Education Foundation, Guntur, Andhra Pradesh, India | [6]Faculty of Mechanical Engineering, SRM Madurai College for Engineering and Technology, Pottapalayam, Tamil Nadu, India

Correspondence: K. Balamurugan (kbalu2006@gmail.com)

Received: 4 July 2025 | Revised: 8 September 2025 | Accepted: 25 September 2025

Funding: The authors received no specific funding for this work.

Keywords: intelligent transportation systems | intrusion detection system | machine learning | malicious node detection | network security | urban traffic security | VANET

ABSTRACT

Vehicular Ad-hoc Networks (VANETs) are a cornerstone of Intelligent Transportation Systems (ITS), enabling efficient vehicle-to-vehicle and vehicle-to-infrastructure communication. However, their open and dynamic nature makes them highly susceptible to security threats such as Distributed Denial of Service (DDoS) attacks and the injection of false data by malicious nodes. Existing security mechanisms often fall short in addressing these challenges due to the real-time and mobile characteristics of VANETs. This paper proposes a Hybrid Explainable Artificial Intelligence (XAI) framework integrated with a Swin Vision Transformer for robust intrusion detection in VANET environments. The proposed model leverages the Swin Transformer's hierarchical feature extraction capabilities and the interpretability of XAI to accurately classify network nodes based on behavioral and transmission characteristics. Key features such as packet transmission duration, communication regularity, and node status are analyzed to detect anomalies and differentiate between benign and malicious nodes. The inclusion of explainability allows for transparent decision-making, facilitating trust and understanding in critical automotive applications. Simulation results validate the model's effectiveness in detecting a wide range of attack vectors while maintaining high accuracy and low false-positive rates. This study contributes to the development of adaptive, intelligent, and trustworthy security solutions for next-generation vehicular networks operating in complex urban traffic scenarios.

1 | Introduction

By incorporating Information and Communication Technology (ICT) into vehicles and infrastructure for transportation, ITS provides a revolutionary solution to the increasing complexity of urban transport systems. The goals of these networks are to improve transportation services' reliability, effectiveness, and security. By coordinating people, infrastructure, and vehicles, ITS makes it possible to collect information, make decisions, and exercise control in an immediate fashion. Applications including

Dr. Santhosh Kumar J
Associate Professor
Department of CST

Prof. Chithambarathanu M
Assistant Professor
Department of CST

Prof.Yashaswini B V
Assistant Professor
Department of CST

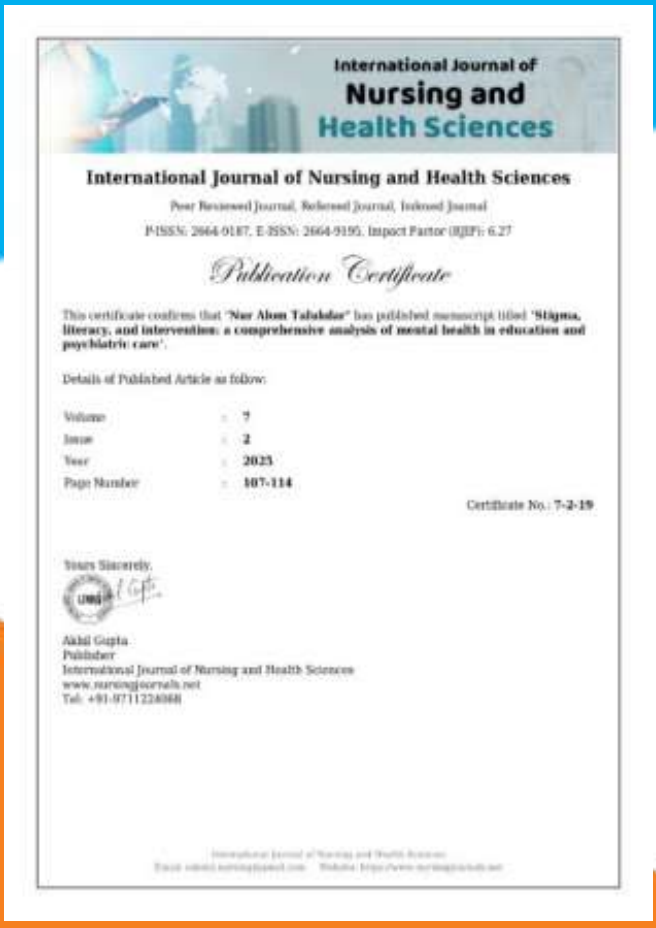
Prof. V Sudharsan
Assistant Professor
Department of ECE

Prof. Bharath B
Assistant Professor
Department of CSE

- Dr. Santosh Kumar J, Prof. M. Chithambarathanu, Prof. Yashashwini, Prof. V Sudharsan, and Prof. Bharath B published a research article titled “Smart Classroom and Timetable Scheduling System using Hybrid Graph Coloring and Cloud Optimization” at the 9th International Conference on Electronics, Communication and Aerospace Technology (ICECA 2025) held in the RVS Technical Campus, Coimbatore, India, on November 05-07, 2025.

Dr. Nur Alom Talukdar
Assistant Professor
Department of CST

- Dr. Nur Alom Talukdar published a research article titled “Stigma, Literacy, and Intervention: A Comprehensive Analysis of Mental Health in Education and Psychiatric Care” in the International Journal of Nursing and Health Sciences, Vol 07, Issue 02, November 2025.



International Journal of
Nursing and
Health Sciences

International Journal of Nursing and Health Sciences

Peer Reviewed Journal, Refereed Journal, Indexed Journal

P-ISSN: 2664-9187, E-ISSN: 2664-9195, Impact Factor (IJIF): 6.27

Publication Certificate

This certificate confirms that **"Nur Alom Talukdar"** has published manuscript titled **"Stigma, literacy, and intervention: a comprehensive analysis of mental health in education and psychiatric care"**.

Details of Published Article as follow:

Volume	:	7
Issue	:	2
Year	:	2025
Page Number	:	107-114

Certificate No.: **7-2-19**

Yours Sincerely,

Akhil Gupta
Publisher
International Journal of Nursing and Health Sciences
www.nursingjournals.net
Tel: +91-9711224068

Prof. Vinayaka V M
Assistant Professor
Department of CST

- Prof. Vinayaka V. M., Assistant Professor, Department of CST successfully completed the NPTEL course “OBE and Accreditation” (Jul–Oct 2025) with an Elite grade (81%).

- Prof. Vinayaka V. M., Assistant Professor, Department of CST successfully completed the NPTEL–AICTE Faculty Development Programme on “OBE and Accreditation” (Jul–Oct 2025).

- Prof. Vinayaka V. M., Assistant Professor, Department of CST successfully completed the NPTEL course “Pattern Recognition and Application” (Jul–Oct 2025) with an Elite grade (58%).


NPTEL ONLINE CERTIFICATION

(Funded by the MoE, Govt. of India)

Skill India

This certificate is awarded to

VINAYAKA V M

for successfully completing the course

Pattern Recognition and Application

with a consolidated score of 58 %

Online Assignments	18.56/25	Proctored Exam	39/75

Total number of candidates certified in this course: 492

Jul-Oct 2025

(12 week course)

Prof. Haimanti Banerji

Coordinator, NPTEL

IIT Kharagpur

Indian Institute of Technology Kharagpur

swayam

Roll No: NPTEL25EE127510526043 36 To verify the certificate No. of credits recommended: 3 or 4

- Prof. Vinayaka V. M., Assistant Professor, Department of CST, successfully completed the NPTEL–AICTE Faculty Development Programme on “Pattern Recognition and Application” (Jul–Oct 2025).


NPTEL-AICTE

Faculty Development Programme

This certificate is awarded to

VINAYAKA V M

for successfully completing the course

Pattern Recognition and Application

with a consolidated score of 58 %

Prof. Andrew Thangaraj

NPTEL Coordinator

IIT Madras

(Jul-Oct 2025)

Roll No: NPTEL25EE127510526043 36 Duration of NPTEL course : 12 Weeks

Dr. Santhosh Kumar J
Associate Professor
Department of CST

- Dr. Santosh Kumar J published a patent on "Neural Network Based System for Optimizing Toothbrush Bristle Layouts using Performance Driven Design" (Application Number: 202541099324).

Office of the Controller General of Patents, Designs & Trade Marks
Department for Promotion of Industry and Internal Trade
Ministry of Commerce & Industry,
Government of India

INTELLECTUAL PROPERTY INDIA

Application Details	
APPLICATION NUMBER	202541099324
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	14/10/2025
APPLICANT NAME	1 . Prof. Sonali Bairagi 2 . Prof. Suhita Biswas 3 . Prof. Soumadip 4 . Prof. Proloy Biswas 5 . Santosh Kumar Jankatti 6 . Dayananda Sagar University
TITLE OF INVENTION	Neural Network-Based System for Optimizing Toothbrush Bristle Layouts Using Performance-Driven Design
FIELD OF INVENTION	COMPUTER SCIENCE
E-MAIL (As Per Record)	santoshkumar-ct@dsu.edu.in
ADDITIONAL-EMAIL (As Per Record)	santoshkumar-ct@dsu.edu.in
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	--
PUBLICATION DATE (U/S 11A)	28/11/2025

Prof. Junaid Mundichipparakkal
Assistant Professor
Department of CST

- Prof. Junaid Mundhichipparakkal, Assistant Professor, received a Certificate of Appreciation for serving as a Reviewer at the 2025 IEEE International Conference on Electrical, Electronics, and Computer Science with Advance Power Technologies (ICE2CPT 2025).

2025 IEEE INTERNATIONAL CONFERENCE ON ELECTRICAL, ELECTRONICS AND COMPUTER SCIENCE WITH ADVANCE POWER TECHNOLOGIES - A FUTURE TREND

(ICE2CPT 2025)

29-31 October, 2025

National Institute of Technology Jamshedpur, Jharkhand, India

Certificate of Appreciation

This is proudly presented to Mr./Ms./Dr. Junaid Mundichipparakkal of Dayananda Sagar University in recognition of your valuable contribution as a Reviewer, during the IEEE International Conference on Electrical, Electronics and Computer Science with Advance Power Technologies - A Future Trend (ICE2CPT 2025), organized by the Department of Electrical Engineering, National Institute of Technology Jamshedpur, in association with the IEEE Kolkata Section, IEEE Industrial Electronics Society and IEEE Student Branch, NIT Jamshedpur, held from 29th to 31st October 2025.

Dr. Santhosh Kumar J
Associate Professor
Department of CST

Prof. Chithambarathanu M
Assistant Professor
Department of CST

- Dr. Santosh Kumar J, Prof. M. Chithambarathanu, and Ms. Dhivya published a patent on "Green Tensor – Unified Carbon-Secure MLOps Platform for Sustainable and Secure AI Training" (Application Number: 202541109226).

Office of the Controller General of Patents, Designs & Trade Marks
Department for Promotion of Industry and Internal Trade
Ministry of Commerce & Industry,
Government of India

INTELLECTUAL PROPERTY INDIA

Application Details	
APPLICATION NUMBER	202541109226
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	11/11/2025
APPLICANT NAME	1 . Santosh Kumar Jankatti 2 . Dayananda Sagar University 3 . B Dhivya 4 . M.Chithambarathanu
TITLE OF INVENTION	GreenTensor – Unified Carbon-Secure MLOps Platform for Sustainable and Secure AI Training
FIELD OF INVENTION	MECHANICAL ENGINEERING
E-MAIL (As Per Record)	sjankatti@gmail.com
ADDITIONAL-EMAIL (As Per Record)	sjankatti@gmail.com
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	--
PUBLICATION DATE (U/S 11A)	28/11/2025

Dr. Ramandeep Kaur
Assistant Professor
Department of CST

- Dr. Ramandeep Kaur successfully completed the Faculty Development Programme titled “QT-03 & QT-04 Basic Quantum Programming and Technologies Lab,” held from October 27 to November 29, 2025. The programme consisted of 60 hours of training (equivalent to 3 credits) and was jointly organized by the Electronics and ICT Academy, MNIT Jaipur, and the AP State Council for Higher Education (APSCHE). The FDP was facilitated by industry and academic partners, including TCS, CDAC Hyderabad, and IBM. The FDP was funded by the Ministry of Electronics and Information Technology (MeitY) and endorsed by AICTE, NQM, and UGC, making it valid for API Score recognition under the Career Advancement Scheme (CAS).

Faculty Development Programme on

QT-03 & QT-04 Basic Quantum Programming and Technologies Lab

October 27 - November 29, 2025

Facilitated by

TCS TATA CONSULTANCY SERVICES

IBM

Certificate of Completion

This is to certify that Mrs. Ramandeep Kaur of Dayananda Sagar University Bangalore has successfully completed the 60 hours (3-Credits equivalent) Faculty Development Programme / Short Term Course, jointly organized by Electronics and ICT Academy, MNIT Jaipur and AP State Council for Higher Education (APSCHE). Her / His performance was Excellent. This programme is funded by the Ministry of Electronics and Information Technology (MeitY) and endorsed by AICTE / NQM / UGC. This certificate will be recognized for API Score under Career Advancement Scheme (CAS).

Vikash Kumar, Coordinator
Pilli Emmanuel Shubhakar, Coordinator & Co-CI, EICT Academy
Vineet Sahula, CI, E&ICT Academy
Anil Prabhakar, Professor, IIT Madras
K. Madhu Murthy, Chairman, APSCHE

MNITJ/APSCHE/HQPT/34094/2025

Dr. Dilip Kumar Jang Bahadur Saini
Associate Professor & Chairperson
Department of CSE(CY)

Dr. Bipin Kumar Rai
Professor & Associate Chair
Department of CSE

- Dr. Dilip Kumar Jang Bahadur Saini and Dr. Bipin Kumar Rai have co-authored a research article titled “A Quantum-Driven Multi-Stage Framework Integrating Variational Entanglement, Reinforcement Learning, and Federated Explainability for Climate-Resilient Farming” published in Scientific Reports (Nature Portfolio) on 3rd November 2025.

scientific reports

Explore content ~ About the journal ~ Publish with us ~

nature > scientific reports > articles > article

Article | Open access | Published: 03 November 2025

A quantum-driven multi-stage framework integrating variational entanglement, reinforcement learning, and federated explainability for climate-resilient farming

Ameen Habibullah Khan, Dilip Kumar Jang Bahadur Saini, Tabassum H. Khan, Bipin Kumar Rai, Amit Pimpalkar & Gautam Kumar

Scientific Reports 15, Article number: 38363 (2025) | Cite this article

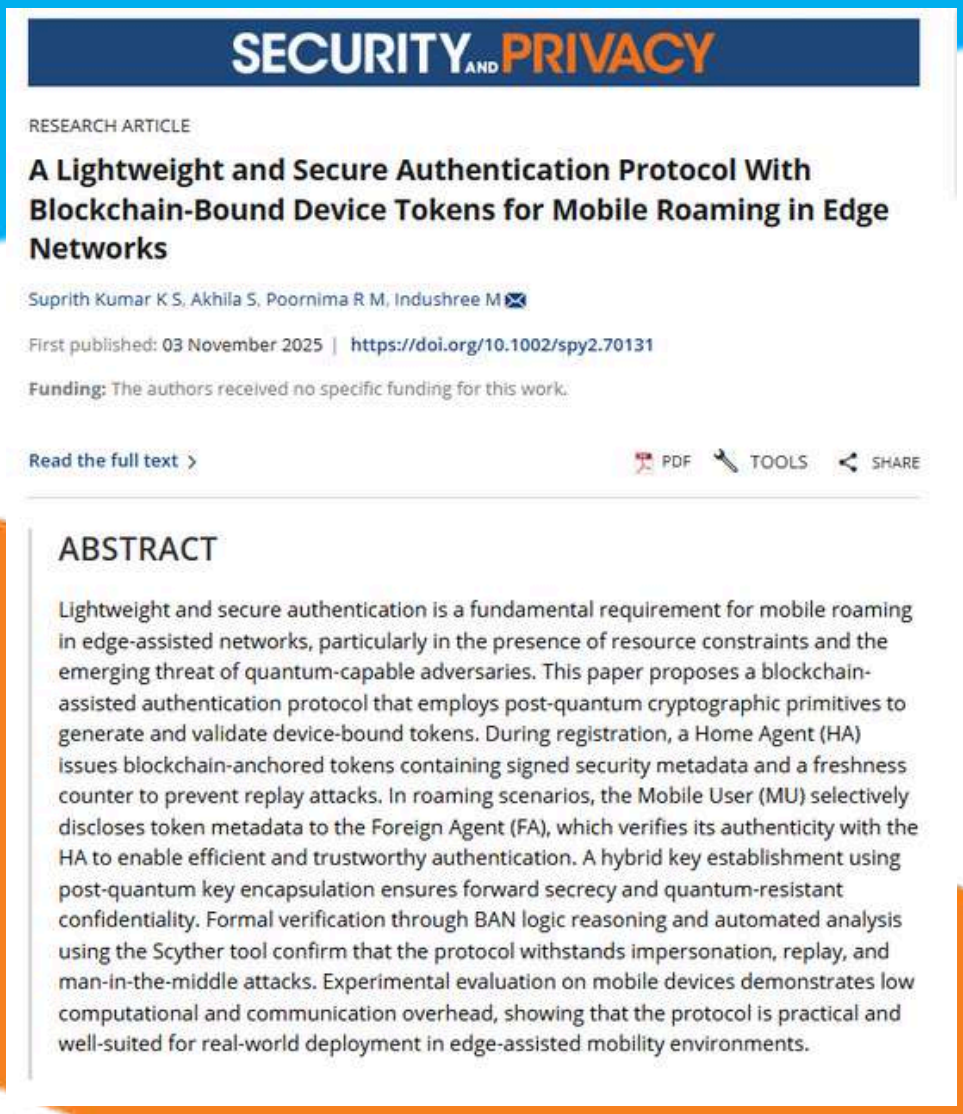
1816 Accesses | Metrics

Abstract

The increasing constraints of climate change and data privacy necessitate high-efficiency, sustainable agriculture, which is causing a shift in the paradigm of Agro-informatics. Most classical agricultural models fail to capture genotype, soil chemistry, and climate dynamics connections. Latent interactions, essential to intelligent agricultural treatments and explainability, are lost in many data processing pipelines that use linear dimensionality reduction or black-box learning. This paper presents a quantum computing architecture for a revolutionary agricultural application, utilizing quantum encoding, topological learning, reinforcement optimization, federated intelligence, and explainability to highlight the importance of this vital field. In Quantum Variational Crop-Soil Entanglement Encoding, crop-soil interaction datasets are encoded into quantum state vectors using variational circuits, preserving high-order entanglement properties (fidelity > 0.96, entropy ~ 0.9). Quantum-guided agri-topological dynamics mapping transforms encoded states into permanent topological maps using a hybrid quantum-classical Topological Data Analysis to track climate-induced agri-system dynamics ($r = 0.84$ with the yield index). Field-level decisions using Quantum Reinforcement Learning for Precision Intervention policy mappings to relate topological states to interventions produce 16.2% normalized yield. Quantum Federated Learning for Distributed Farm Intelligence uses privacy-preserving, encrypted quantum policy gradients to enable learning across farms in varied locations, lowering communication by 42% and improving accuracy by 9.3%. Quantum Explainability through Entropic Intervention Attribution generates causal graphs of yield drivers with 89% confidence intervals using entropy-based attributions. This integrated framework enhances the knowledge preservation, policy accuracy, expandability, and trust of agricultural Artificial Intelligence systems, enabling quantum-accelerated, information-based, future-ready farming decision support systems.

Dr. Indushree M
Assistant Professor
Department of CSE(CY)

- Dr. Indushree M has co-authored and published a research article titled “A Lightweight and Secure Authentication Protocol with Blockchain-Bound Device Tokens for Mobile Roaming in Edge Networks” in the international journal Security and Privacy (Wiley), first published on 3rd November 2025.



SECURITY AND PRIVACY

RESEARCH ARTICLE

A Lightweight and Secure Authentication Protocol With Blockchain-Bound Device Tokens for Mobile Roaming in Edge Networks

Suprith Kumar K S, Akhila S, Poornima R M, Indushree M

First published: 03 November 2025 | https://doi.org/10.1002/spy2.70131

Funding: The authors received no specific funding for this work.

Read the full text > PDF TOOLS SHARE

ABSTRACT

Lightweight and secure authentication is a fundamental requirement for mobile roaming in edge-assisted networks, particularly in the presence of resource constraints and the emerging threat of quantum-capable adversaries. This paper proposes a blockchain-assisted authentication protocol that employs post-quantum cryptographic primitives to generate and validate device-bound tokens. During registration, a Home Agent (HA) issues blockchain-anchored tokens containing signed security metadata and a freshness counter to prevent replay attacks. In roaming scenarios, the Mobile User (MU) selectively discloses token metadata to the Foreign Agent (FA), which verifies its authenticity with the HA to enable efficient and trustworthy authentication. A hybrid key establishment using post-quantum key encapsulation ensures forward secrecy and quantum-resistant confidentiality. Formal verification through BAN logic reasoning and automated analysis using the Scyther tool confirm that the protocol withstands impersonation, replay, and man-in-the-middle attacks. Experimental evaluation on mobile devices demonstrates low computational and communication overhead, showing that the protocol is practical and well-suited for real-world deployment in edge-assisted mobility environments.

Dr. Durbadal Chattaraj
Associate Professor
Department of CSE(CY)

- Dr. Durbadal Chattaraj has presented a research paper titled “DVSAT: Designing Cyber Risk Assessment Framework for Next Generation Communication Networks, Applications, and APIs” at the 2025 IEEE International Conference on Distributed Computing, VLSI, Electrical Circuits and Robotics (IEEE DISCOVER 2025), organized by the IEEE Mangalore Subsection and hosted by P.A. College of Engineering, Mangaluru, Karnataka, on 17th–18th October 2025.

P.A. COLLEGE OF ENGINEERING

IEEE

IEEE Mangalore Subsection

IEEE MANGALORE SUBSECTION (R0011901)

2025 IEEE INTERNATIONAL CONFERENCE ON DISTRIBUTED COMPUTING, VLSI, ELECTRICAL CIRCUITS AND ROBOTICS (2025 IEEE DISCOVER)
OCTOBER 17-18, 2025

CERTIFICATE OF PRESENTATION

This is to certify that Dr/Mr/Ms. Vyasaraj Tarihalalu of Dayananda Sagar University has participated and presented a paper titled DVSAT: Designing Cyber Risk Assessment Framework for Next Generation Communication Networks, Applications and APIs in 2025 IEEE International Conference on Distributed Computing, VLSI, Electrical Circuits and Robotics (2025 IEEE DISCOVER - Conference Record #66922) organized by IEEE Mangalore Subsection at P.A. College of Engineering, Mangaluru, Karnataka, India during October 17-18, 2025.

Co-authors Durbadal Chattaraj, Tarihalalu Vyasaraj S Sairaj, Abishek H Krishna, Theerthesh M R

Dr. Sharmila Kumari M.
PACE, Mangaluru
Organizing Chair, 2025 IEEE DISCOVER

Dr. Mohammed Zakir B.
PACE, Mangaluru
Organizing Chair, 2025 IEEE DISCOVER

Dr. S. V. Sathyanarayana
Chair, IEEE Mangalore Subsection
General Chair, 2025 IEEE DISCOVER

Dr Ramis M. K.
Principal, PACE, Mangaluru
General Chair, 2025 IEEE DISCOVER

Dr. D.Sumathi
Professor
Department of CSE(CY)

- Dr. D. Sumathi has co-authored a research article titled “Prediction of Cardiovascular Disease Risk from Retinal Vasculature Using a Quantitative Diagnostic Approach with CVD-Net in DR and HR Patients,” published in the IEEE Access Journal on 16th September 2025.

IEEE Access

Received 15 August 2025, accepted 28 August 2025, date of publication 16 September 2025, date of current version 7 October 2025.

Digital Object Identifier 10.1109/ACCESS.2025.3610424

RESEARCH ARTICLE

Prediction of Cardiovascular Disease Risk From Retinal Vasculature Using a Quantitative Diagnostic Approach With CVD-Net in DR and HR Patients

SATHYAVANI ADDANKI[1] AND D. SUMATHI[2], (Senior Member, IEEE)

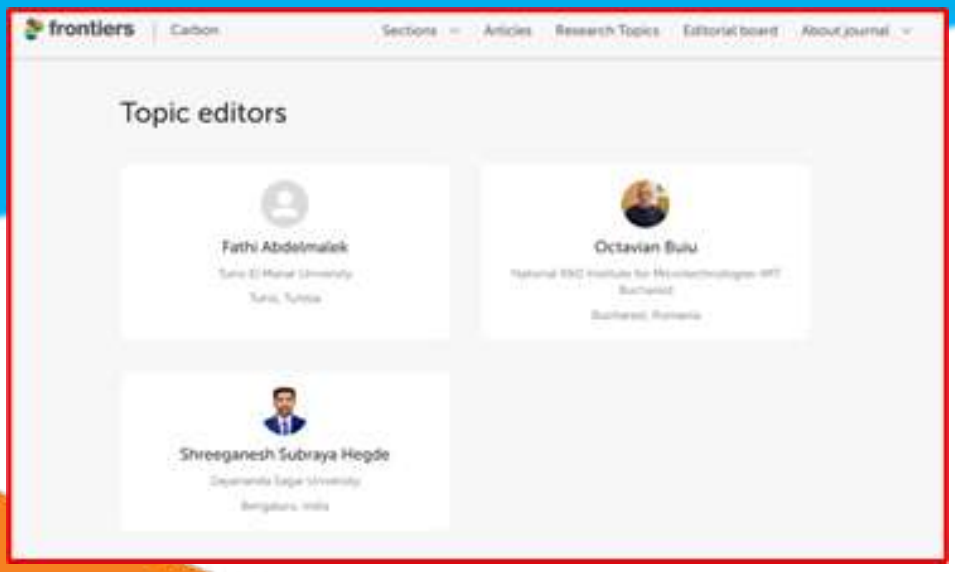
[1]School of Computer Science and Engineering, VIT-AP University, Amaravati, Andhra Pradesh 522237, India
[2]Department of Computer Science and Engineering (Cyber Security), School of Engineering, Dayananda Sagar University, Bengaluru, Karnataka 560078, India

Corresponding author: D. Sumathi (sumathi.research28@gmail.com)

ABSTRACT The global incidence of diabetes is increasing significantly each year, posing serious health risks if not diagnosed at an early stage. Elevated blood glucose levels can lead to complications such as Diabetic Retinopathy (DR), Hypertensive Retinopathy (HR), Cardiovascular Diseases (CVD), and renal failure. **Background** The objective of this study is to establish an association between retinopathy and CVD, which is driven by shared pathogenic mechanisms including inflammation, microvascular damage, oxidative stress, and endothelial dysfunction. Diabetes and hypertension substantially increase the likelihood of DR and HR, which in turn elevate the risk of developing CVD. **Objective** This work is to forecast the risk of cardiovascular diseases by analyzing retinal vasculature and associated clinical risk factors in patients with DR and HR. **Methods** The method involves a quantitative diagnostic approach using morphological and physiological attributes of the retinal vascular system, such as the Arteriole-to-Venule ratio (AVR) and the Cup-to-Disc ratio (CDR), which serve as biomarkers. In addition, systemic risk indicators including age, gender, Body Mass Index (BMI), smoking habits, and alcohol consumption are incorporated. Deep Learning (DL) techniques are employed to detect DR, HR, and CVD and to quantify their characteristic features. **Results** The results indicate that early investigations based on the proposed approach can effectively identify patients at high risk, potentially preventing up to 90% of CVD cases when detected during the early stages. **Implications** This study highlight the potential of retinal imaging, when combined with deep learning, to serve as a reliable, non-invasive tool for early cardiovascular risk prediction in diabetic and hypertensive individuals, enabling timely clinical intervention.

Dr. Shreeganesh Subraya Hegde
Assistant Professor
Department of Chemistry

- Dr. Shreeganesh Subraya Hegde, Assistant Professor, Department of Chemistry, has been selected as a Guest Associate Editor / Topic Editor for the research theme “Emerging 2D Carbon Allotropes Beyond Graphene for Sensing and Energy Applications” in the international peer-reviewed journal Frontiers in Carbon.



- Dr. Shreeganesh Hegde actively participated in a Science Talk titled “Revisiting Biosensing Using Digital Holography,” organized by the American Chemical Society on 16 October 2025.

- Dr. Shreeganesh Hegde has served as an expert reviewer for several reputed Q1 Elsevier journals, including Journal of Energy Storage (IF 9.8), Journal of Power Sources (IF 7.9), Results in Engineering (IF 7.9), Materials Chemistry and Physics (IF 4.7), and Journal of Virological Methods (IF 1.6)

Dr. A V Raghu
Professor
Department of Chemistry

- Dr. A.V. RAGHU has served as a reviewer for several reputed Elsevier journals.

Review History Report

Raghu Anjanapura

ELSEVIER

Elsevier Reviewer

From: 1 November 2025 To: 30 November 2025

All dates in GMT

Total journals reviewed for:	4
Total reviews completed:	4
Carbohydrate Polymers	1
Composites Part A: Applied Science and Manufacturing	1

- Dr. A. V. Raghu, Professor, will serve as a Subject Expert for the Pre-Submission Colloquium at the Department of Chemistry, Adichunchanagiri University, B.G. Nagar, Nagamangala, Bellur, scheduled for 27th November 2025.

Dr S. Arungalai Vendan
Professor
Department of ECE

- Dr. Arungalai Vendan S, Professor, Department of Electronics and Communication Engineering, School of Engineering, Dayananda Sagar University, has earned the NPTEL Elite Certification in Accreditation and Outcome-Based Learning (Aug–Oct 2025), securing an excellent 90% overall score.

Dr Arun Ananthanarayanan
Associate Professor
Department of ECE

- Dr. Arun Ananthanarayanan, Associate Professor, Department of Electronics and Communication Engineering, School of Engineering, Dayananda Sagar University, has published a Q1-quartile research article titled “Enhancing 6G Wireless Performance Through Advanced MIMO Techniques” in Simulation Modelling Practice and Theory (Elsevier).

Simulation Modelling Practice and Theory 146 (2026) 103222

Contents lists available at ScienceDirect

Simulation Modelling Practice and Theory

journal homepage: www.elsevier.com/locate/simpat

Enhancing 6G wireless performance through advanced MIMO techniques

Arun Ananthanarayanan [a,*], S. Kanithan [b], Sathish Kumar Hari [c], Naeem Ahmed [a], Nadeem Pasha [a]

[a] ECE, Dayananda Sagar University, School of Engineering, India
[b] CSE, JAIN (Deemed-to-be University), Jakkasandra Post, Bengaluru, Kanakapura Road, Karnataka, India
[c] Mechanical-Electrical-Plumbing, China Railway 10th Bureau Group (L.L.C), Dubai, United Arab Emirates

ARTICLE INFO

Keywords:
Channel State Information (CSI)
Deep learning methods
CNNs
etc.
Class neural network (CNN)
Long Short-Term Memory (LSTM)
Spectral beamforming optimization
Computation time
Efficiency of computation

ABSTRACT

To apply efficient beamforming, we need to be able to estimate channel state information (CSI) accurately. It is an essential factor that determines the success of high-data-rate, reliable communication in modern wireless networks. However, classic approaches tend to be inefficient in complex and fast-changing environments. This paper proposes a Deep Single-Carrier Orthogonal Frequency Division Multiplexing (DS-OFDM) to solve these difficulties. Division Multiplexing (Deep SC—OFDM) framework, which incorporates Convolutional Neural End-to-End Long Short Term Memory (LSTM) & CNN networks for adaptive networks. Signal processing for 6 G systems. The proposed model simultaneously performs modulation and equalization, overcoming the drawbacks of standard OFDM systems — such as high PAPR and poor interference tolerance — by leveraging CNNs' spatial feature extraction and LSTMs' temporal feature extraction. The identifier can minimize signal degradation and increase symbol detection accuracy, as demonstrated by simulation results. In addition, it shows that the Deep SC—OFDM framework exhibits lower PAPR with improved BER performance. Thus, our proposed approach outperforms other deep learning based MIMO and beamforming methods in terms of performance, faster convergence, and higher spectral efficiency. These findings suggest that the proposed approach is highly suitable for selecting intelligent and energy-efficient transceiver architectures in future 6 G networks.

1. Introduction

The increasing demand for more data capacity and less latency, the limits of modern computer systems for digital communications; Fifth generation (5 G) networks, specifically through the These challenges have been addressed in the new 5 G radio generation (5 G New Radio, NR) standard by integrating newer and more advanced multiantenna technologies such as massive multiple-input multiple-output (MIMO) systems [1]. In the evolution of wireless communication towards the sixth generation (6 G), a significant update is anticipated. significant change towards the integration of artificial intelligence (AI) to provide enhanced multi-sensory access to services and easy global connectivity [2]. As a result, 6 G networks are being designed to meet stringent performance requirements (e. g., ultra-low latency). Unmatched reliability, with the addition of massive amounts of devices [3]. The growth of wireless networks.

* Corresponding author.
E-mail address: arunananthanarayan-ece@dsu.edu.in (A. Ananthanarayanan).

https://doi.org/10.1016/j.simpat.2025.103222
Received 31 August 2025; Received in revised form 29 October 2025; Accepted 1 November 2025
Available online 2 November 2025

Dr Mukthi Chaturvedi
Assistant Professor
Department of ECE

- Dr. Mukti Chaturvedi, Assistant Professor, Department of Electronics and Communication Engineering, School of Engineering, Dayananda Sagar University, has successfully completed the NPTEL course “Accreditation and Outcome Based Learning” (Aug–Oct 2025), earning an Elite Certification with an impressive 91% consolidated score. The course, offered by IIT Kharagpur through the NPTEL–SWAYAM platform.

Elite

NPTEL ONLINE CERTIFICATION

(Funded by the MoE, Govt. of India)

Skill India
कौशल भारत-कुशल भारत

This certificate is awarded to

MUKTI CHATURVEDI

for successfully completing the course

Accreditation and Outcome Based Learning

with a consolidated score of 91 %

Online Assignments	22.42/25	Proctored Exam	68.88/75

Total number of candidates certified in this course: 1958

Aug-Oct 2025

(8 week course)

Prof. Haimanti Banerji
Coordinator, NPTEL
IIT Kharagpur

Indian Institute of Technology Kharagpur

swayam

Roll No: NPTEL25GE63S352605102 To verify the certificate No. of credits recommended: 2 or 3

Dr Supraja Eduru
Assistant Professor
Department of ECE

- Dr. Supraja Eduru, Assistant Professor, Department of Electronics and Communication Engineering, School of Engineering, Dayananda Sagar University, has published a research article titled “A Novel Deep Multi-scale Convolutional Neural Network for Shockable and Non-shockable Arrhythmia Classification” in SN Computer Science (Springer Nature) on 6th November 2025 (Volume 6, Article 944). This paper is a part of collaborative work.

Prof. Jisy N K
Assistant Professor
Department of ECE

- Prof. Jisy N K, Assistant Professor, Department of Electronics and Communication Engineering, School of Engineering, Dayananda Sagar University, published a research article titled “A Comparative Study of Performance of Various Deep Learning Models and their Explainability in Detection of Glaucoma” in IEEE Access (Q1, Impact Factor: 3.6) on November 6th, 2025. The publication is co-authored by Prof. Sudha Radhika, Dr. Sirisha Senthil, and Prof. M B Srinivas.

IEEE Access

Received 26 September 2025, accepted 2 November 2025, date of publication 6 November 2025, date of current version 17 November 2025.

Digital Object Identifier 10.1109/ACCESS.2025.3629624

RESEARCH ARTICLE

A Comparative Study of Performance of Various Deep Learning Models and Their Explainability in Detection of Glaucoma

N. K. JISY[1,2], SUDHA RADHIKA[1], (Member, IEEE), SIRISHA SENTHIL[3], AND M. B. SRINIVAS[4]

[1]Electrical and Electronics Engineering Department, BITS Pilani, Hyderabad Campus, Hyderabad 500078, India
[2]Department of Electronics and Communication Engineering, Dayananda Sagar University, Bengaluru 562112, India
[3]VST Center for Glaucoma Care, L V Prasad Eye Institute, Hyderabad 500034, India
[4]Aditya University, Kakinada 533437, India

Corresponding author: Sudha Radhika (sradhika@hyderabad.bits-pilani.ac.in)

This work involved human subjects or animals in its research. Approval of all ethical and experimental procedures and protocols was granted by the LVPEI-GLEAMS data protocol was approved by the LVPEI Institutional Ethics Committee under Application No. LEC 08131 and the LVPEI Longitudinal Glaucoma Evaluations Study (LVPEI LOGES), the LVPEI Institutional Ethics Committee under Application No. LEC II-252).

ABSTRACT Glaucoma is a serious eye-debilitating disease affecting around 76 million people worldwide. In this work, we apply deep learning models, CNN and Vision Transformer (ViT), to understand their performance in discriminating the normal and glaucomatous fundus images. We further study the performance of Swin Transformer, a hierarchical Vision Transformer, relative to CNN and ViT. In the proposed approach, fundus pre-processing is carried out before training the pre-trained ViT and Swin variants, and deep CNN models with transfer learning under tuned hyperparameter settings. Additionally, the explainable AI (XAI) technique -Grad-CAM- is used to understand the model that performs better in terms of visualizing the areas of damage due to glaucoma in the fundus image and thus has better explainability. The experimental results obtained appear to indicate that ViT with a pretrained ViT_B32 model performs better both in terms of the quality metrics such as accuracy, sensitivity, specificity and area under the receiver operating characteristic curve (AUC), as well as the explainability of results. This (ViT_B32) model exhibits a remarkable accuracy of 96.19%, along with a sensitivity of 99.01%, an F1 score of 0.96, and an AUC of 0.995, indicating that it could be a better model for improved accuracy and sensitivity in the detection of glaucoma.

INDEX TERMS Glaucoma, fundus image, detection, CNN, vision transformer, SWIN, visualization.

I. INTRODUCTION

Deep learning (DL) models are increasingly playing a major role in automating the medical diagnosis. While CNN has been a popular DL model with researchers, recent DL advancements encompass transformer models, more particularly the vision transformer (ViT), proposed for image classification by Dosovitskiy et al. [1], [2], [3], [4], [5], [6], presently researched and experimented with in ophthalmology [7], [8]. In certain cases, ViT appears to have surpassed Convolutional Neural Networks (CNNs) in prediction accuracy with its self-attention mechanism, achieving state-of-the-art performance [9], [10]. However, very few results appear to have been reported for cases involving glaucoma.

In ophthalmology, Glaucoma, a critical ocular disorder that is asymptomatic in its initial stages, needs early attention and treatment to prevent eventual blindness. Worldwide, the reported glaucoma cases surged from 64.3 million in 2013 to approximately 76 million in 2020 and is projected to surpass 112 million in 2040 [11]. Hence, automated diagnosis for early detection of this blinding condition is paramount in reducing its progression. Several imaging modalities for automation are considered, of which non-invasive fundus photographs are prevalent [12]. Fundus images delineate the structural characteristics of the eye, encompassing the optic disc (OD), optic cup (OC), neuroretinal rim (NRR), retinal nerve fiber layers (RNFL), macula, fovea, and

The associate editor coordinating the review of this manuscript and approving it for publication was Jiaojiao Li.

Dr Vinu R
Associate Professor
Department of ECE

- Dr. Vinu R, Associate Professor, Department of ECE, Dayananda Sagar University, has published a book chapter titled “Artificial Intelligence in Failure Prediction of Aircraft Components and Inventory Leveraging” in Artificial Intelligence Applications in Aeronautical and Aerospace Engineering, Wiley Online, Chapter 18.

- Dr. Vinu R, Associate Professor, Department of ECE, Dayananda Sagar University, presented a research paper titled “Machine Learning based Early Diagnosis and EMG Assisted Monitoring of Parkinson’s Disorder” at the 9th IEEE International Conference on Electronics, Communication and Aerospace Technology (ICECA-2025) organised by RVS Technical Campus, Coimbatore, India, held from 5th – 7th November 2025. The publication is co-authored by Tejas S, Thanisha Kumar, Venkat Bharadwaj J, Ketan Desai, and Prof.Jisy.N.K.

- Dr. Vinu R, Associate Professor, Department of ECE, Dayananda Sagar University, has co-authored a research paper titled “FBG-Based Real-Time Data on Hand Pressure for Analysis of Limb Functionality” presented in the 2025 12th International Conference on Computing for Sustainable Global Development (INDIACom), Delhi, India, 2025, and published in IEEE Xplore.


Conferences > 2025 12th International Confe...

FBG Based Real Time Data on Hand Pressure for Analysis of Limb Functionality

Publisher: IEEE | Cite This | PDF

Tina Elizabeth Thomas ; Preeta Sharan ; Vinu R. ; Saara K. All Authors

29 Full Text Views

Abstract

Document Sections

I. Introduction

II. Literature Review

III. Working Principle of FBG as a Pressure Sensor

IV. Experimental Details

V. Data Acquisition and Analysis

Show Full Outline

Abstract:
The use of wheelchairs by individuals with lower limb impairments often results in upper limb injuries due to repetitive strain. This study investigates the palm pressure exerted during wheelchair propulsion, employing Fiber Bragg Grating (FBG) sensors to provide a detailed analysis. Six healthy adult participants are included in the study, where FBG sensors are attached to their palms and integrated into gloves during wheelchair movement in various directions (forward, backward, left, and right). The palm pressure is calculated based on strain values, corresponding to variations in the Bragg wavelength and simulation study is conducted using Grating MOD optical tool. The results indicate that average palm pressure ranges from 20 kPa to 100 kPa, with a maximum pressure of 115.6 kPa observed during backward propulsion, which corresponds to a 0.34 nm wavelength shift. These findings contribute valuable data for physiotherapists, offering a reference point for assessing upper limb functionality during and after stroke rehabilitation.

Published in: 2025 12th International Conference on Computing for Sustainable Global Development (INDIACom)

Date of Conference: 02-04 April 2025

DOI: 10.23919/INDIACom66777.2025.11115612

- Dr. Vinu R, Associate Professor, Department of ECE, Dayananda Sagar University, has co-authored a research paper titled “Optical Sensor for Rail Wheel Contact Forced Vibration Measurement” presented in the 2025 12th International Conference on Computing for Sustainable Global Development (INDIACom), Delhi, India, 2025, and published in IEEE Xplore.


Conferences > 2025 12th International Confe...

Optical Sensor for Rail Wheel Contact Forced Vibration Measurement

Publisher: IEEE | Cite This | PDF

Sheeba Kumari C. ; Preeta Sharan ; Vinu R. ; Saara K. All Authors

22 Full Text Views

Abstract

Document Sections

I. Introduction

II. Forces Exerted by Railways

III. Optical Sensor

IV. Results and Discussions

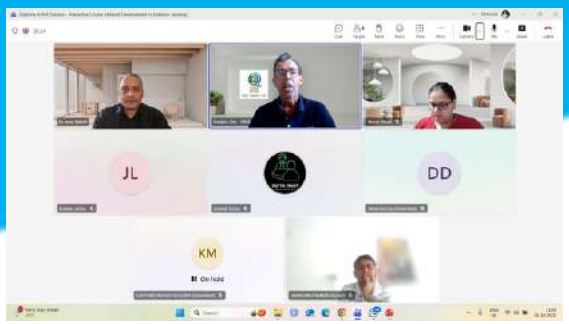
V. Conclusion

Abstract:
In rail-transit, the pleasure of journey is deeplyvalued. Trainfrequency has increased in this era, and in order to meet public demand, structural health monitoring of railways has drawn all railway engineers together. The issue of stress and strain created in rails is caused by the rise in axle loading and the acceleration of oflocomotives. theforces applied to the wheel rail contact point on the track is the main factor to be considered as the speedincreases. Theforce changes in accordance with the speed of the train. The force applied to the track is measured in terms of strain and stress using an optical fibre based on fibre Bragg grating. A grating Mod tool then simulates these measured values to demonstrate the variation in wavelength shift in the sensor for various frequency ranges. The laboratory based roller rig setup is used for this experiment.

Published in: 2025 12th International Conference on Computing for Sustainable Global Development (INDIACom)

Dr. Arun Balodi
Chairperson & Professor
Department of ECE

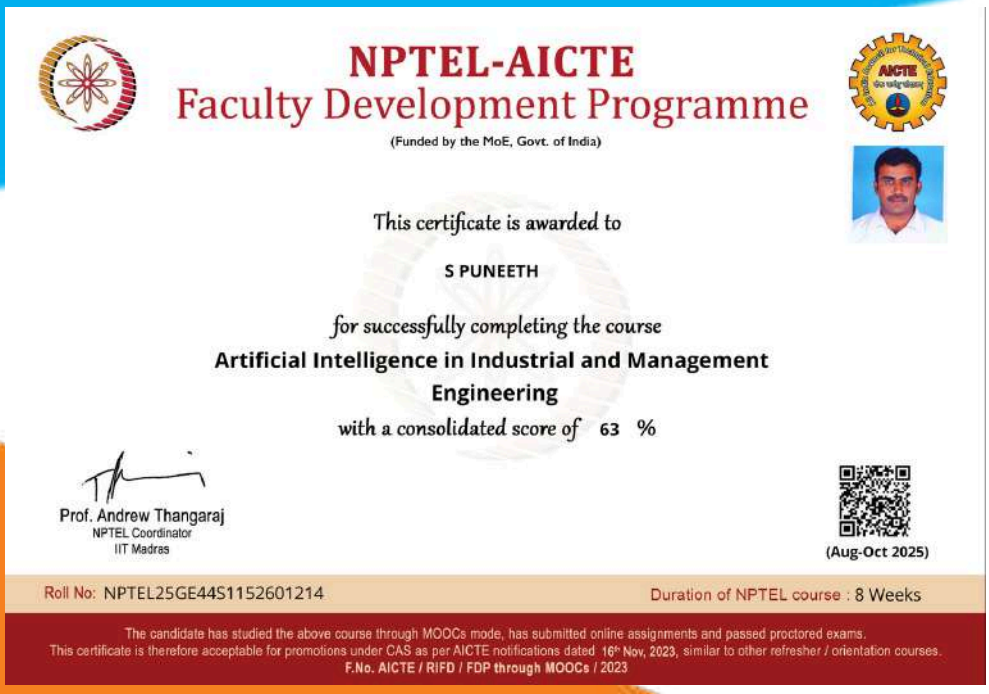
- Dr. Arun Balodi, Chairperson and Professor, Department of Electronics and Communication Engineering, School of Engineering, Dayananda Sagar University, delivered a session on “Creating Interactive Course Materials Using Technology to Enhance Learning” for participants of the Diploma in Professor in Practice (PoP) program at ISME Bengaluru on November 26, 2025.



- Dr. Arun Balodi, Chairperson and Professor, Department of Electronics and Communication Engineering, School of Engineering, Dayananda Sagar University, served as a jury member for Anveshan 2025, the flagship hackathon of the IEEE Bangalore Section SAC. The event showcased impressive software and hardware innovations from student teams who advanced through two competitive rounds to the grand finale in Bengaluru. The hackathon provided valuable industry exposure and highlighted the creativity and problem-solving capabilities of emerging engineers.

Prof. Puneeth S
Assistant Professor
Department of ECE

- Prof. Puneeth S, Assistant Professor, Department of Electronics and Communication Engineering, School of Engineering, Dayananda Sagar University, has successfully completed the NPTEL course “Artificial Intelligence in Industrial and Management Engineering” (Aug–Oct 2025), an 8-week program offered under the NPTEL–SWAYAM initiative. This accomplishment highlights his commitment to applying AI techniques within industrial and management engineering domains.



NPTEL-AICTE
Faculty Development Programme
(Funded by the MoE, Govt. of India)

This certificate is awarded to

S PUNEETH

for successfully completing the course
Artificial Intelligence in Industrial and Management Engineering
with a consolidated score of 63 %

Prof. Andrew Thangaraj
NPTEL Coordinator
IIT Madras

(Aug-Oct 2025)

Roll No: NPTEL25GE44S1152601214 Duration of NPTEL course : 8 Weeks

The candidate has studied the above course through MOOCs mode, has submitted online assignments and passed proctored exams.
This certificate is therefore acceptable for promotions under CAS as per AICTE notifications dated 16th Nov, 2023, similar to other refresher / orientation courses.
F.No. AICTE / RIFD / FDP through MOOCs / 2023

SCHOOL OF
ENGINEERING

STUDENT ACHIEVEMENTS

- Ms. Vrinda Katavkar (ENG23RA0024), a 5th-semester student from the Department of AI and Robotics, has achieved an impressive milestone by securing the Second Runner-Up position at Technocognition ‘25. She has been awarded a prize of Rs. 10,000 for her commendable performance.

- Mr. Shivam Kumar (ENG24AD0054) of CSE [AI & DS] - 3rd Sem has successfully completed an Oracle Certified Professional course on “Oracle Cloud Infrastructure 2025 Certified Generative AI Professional” conducted by Oracle University on 31st Sep 2025.

- Mr. Siddarth Tembugade (ENG24AD0059) of B.Tech - CSE [AI & DS] - 3rd Sem has participated and secured First Runner Up of the “Prompt To Product Hackathon”, held on 21st and 22nd of November 2025. His exemplary creativity, innovation, and problem-solving skills in developing AI-driven low-code/no-code applications have been duly recognized.

- Ms. Ruthi Namburi (ENG24AD0015) of B.Tech - CSE [AI & DS] - 3rd Sem has successfully participated in the 36-hour vibeathon, organized by Polaris School of Technology and Replit, Bengaluru, in the month of November 2025.

- Ms. Ruthi Namburi (ENG24AD0015) of B.Tech - CSE [AI & DS] - 3rd Sem has successfully participated in Tech-Triad 2025, an International Tech Fest-Hackathon organized by the Department of ISE, Dayananda Sagar Academy of Technology and Management, Bengaluru, on 12 November 2025.

- Ms. Manyashree D of 5-B Section, CSE (AIML), proudly represented DSU at the State-Level Best Practices Sharing of Community Engagement Initiatives held at Azim Premji University on 6 October 2025. Among 11 shortlisted universities, DSU showcased its impactful NSS, UBA, social awareness, and rural development initiatives.

- Mr. Chethan K. Murthy of 7-A Section, CSE (AIML), Dayananda Sagar University, presented his research paper titled “A Hybrid Spiking Convolutional Neural Network for Computationally Efficient Pathology Image Classification” at the 2nd IEEE International Conference on Intelligent Signal Processing and Effective Communication Technologies 2025. The conference was held on 07–08 November 2025 at ABV–IIITM Gwalior


Atal Bihari Vajpayee Indian Institute of Information Technology and Management Gwalior

INSPECT IEEE

2nd IEEE INTERNATIONAL CONFERENCE ON
INTELLIGENT SIGNAL PROCESSING AND EFFECTIVE COMMUNICATION TECHNOLOGIES 2025

CERTIFICATE OF PRESENTATION

THIS CERTIFICATE IS PROUDLY AWARDED TO

CHETHAN K MURTHY

FOR PRESENTING PAPER TITLED

A HYBRID SPIKING CONVOLUTIONAL NEURAL NETWORK FOR COMPUTATIONALLY EFFICIENT PATHOLOGY IMAGE CLASSIFICATION

AT THE 2ND IEEE INTERNATIONAL CONFERENCE ON INTELLIGENT SIGNAL PROCESSING AND EFFECTIVE COMMUNICATION TECHNOLOGIES 2025,
HELD ON 07 - 08 NOVEMBER, 2025, AT ABV-IIITM GWALIOR

Dr. I.A. Ansari
Conference Chair

08.11.2025
DATE

Dr. Vinal Patel
Conference Chair

- Mr. R. L. Jayesh and Rajath U of 5-C Section, CSE (AIML), Dayananda Sagar University, participated in TechnoCognition ’25, a 36-hour international protothon hosted at DSU. The event pushed students to build real, working prototypes across IoT, robotics, aerospace, circuits, and AI.

- Mr. Shashi Kumar C (ENG23DS0034) and Ms. Kumari Nainshi (ENG23DS0016) from Data Science department have won a $100 Global Internship Voucher along with goodies from GeeksforGeeks at the international event Technogition ’25, organized by the Department of Electronics and Communication Engineering, where they created the first Cognitive Digital Twins for predictive maintenance.

- Mr. Shashi Kumar C (ENG23DS0034) served as a Core Volunteer at IEEE FNWF 2025 from November 10th to 12th, contributing to this premier forum on next-generation network technologies. The event convened global experts to explore advancements in 6G, AI-native networking, and digital inclusion. Over the three days, he supported the smooth delivery of high-profile keynotes, technical symposiums, and workshop sessions.

- The students of the Department of Aerospace Engineering actively participated in the India Manufacturing Show 2025, held on 7–8 November 2025 at the Bangalore International Exhibition Centre (BIEC), Bengaluru. As a premier event for the manufacturing and engineering sectors, the exhibition provided our students with valuable exposure to advanced manufacturing technologies and their applications in the aerospace domain.

- Mr Rahul Bhargav (ENG22AS0027), IV Year Student from the Department of Aerospace Engineering successfully completed the NPTEL Course titled “Aerodynamics design of axial flow compressors and fans” and “Drone Systems and Control”.


NPTEL ONLINE CERTIFICATION
(Funded by the MoE, Govt. of India)
Skill India
This certificate is awarded to
K S RAHUL BHARGAV
for successfully completing the course
Aerodynamic Design of Axial Flow Compressors & Fans
with a consolidated score of 49 %
Online Assignments 13.91/25 | Proctored Exam 35/75
Total number of candidates certified in this course: 37
Jul-Oct 2025
(12 week course)
Prof. Haimanti Banerji
Coordinator, NPTEL
IIT Kharagpur
Indian Institute of Technology Kharagpur
swayam
Roll No: NPTEL25AE34S1252604000 To verify the certificate No. of credits recommended: 3 or 4


Elite
NPTEL ONLINE CERTIFICATION
(Funded by the MoE, Govt. of India)
Skill India
This certificate is awarded to
K S RAHUL BHARGAV
for successfully completing the course
Drone Systems and Control
with a consolidated score of 82 %
Online Assignments 24.47/25 | Proctored Exam 57.5/75
Total number of candidates certified in this course: 1192
Jul-Oct 2025
(12 week course)
Prof. L. Umanand
NPTEL Coordinator & Chair, Centre for Continuing Education, IISc Bangalore
Indian Institute of Science Bangalore
swayam
Roll No: NPTEL25AE30S1152603930 To verify the certificate No. of credits recommended: 3 or 4

- Ms Kaniska (ENG22AS0038), IV Year Student from the Department of Aerospace Engineering successfully completed the NPTEL Course titled “Smart structures”, “Industrial Aerodynamics”, and “Organizational Behaviour”.

- Ten Students from CSE, DSU have been selected for the Scholarship Program at PHINIA International, a global technology and automotive solutions company, during 3rd November 2025 and the total scholarship value awarded to the students is ₹10,00,000.

ENG22CS0207	Vikram	G Rathod
ENG23CS0066	G	Nithesh
ENG22CS0102	Matin	Raheman Nadaf
ENG24CS0217	Shivaraj	
ENG24CS0125	Manoj	Satish shet
ENG22CS0002	A	Sachin
ENG23CS0107	Manoj	Kumar v
ENG23CS0056	Deekshith	Prasad r
ENG23CS0169	S	Shreenidhi
ENG24CS0017	Akshay	Annappa Naik

- Mr. Sameer S Katte (ENG22CS0148), Mr. S G Samanth (ENG22CS0140), Mr. Sheikh Fahad (ENG22CS0158), and Mr. Satwik Kashyap (ENG22CS0155), 7th Sem CSE Students, Department of CSE, have won the first prize in NoKia Bell Labs – Bangalore University Collaboration Conclave (NBUC) 2025 in Nokia premises under ITU project category during 3rd November 2025.

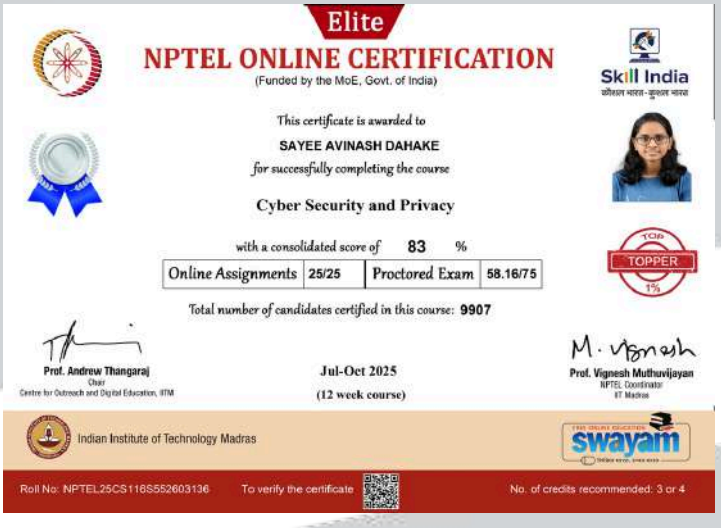
- Ms. Ridhi Golchha (ENG23CS0164) and Mr. Tejas H R (ENG23CS0480), 3rd-year CSE students, have won the “Outstanding Innovative Idea” award at the FirstGen Ideathon 2025, for the project title “NyaySathi – AI Legal Assistant for Every Citizen,” conducted by the International Affairs Department, Dayananda Sagar University, on 17th November 2025.

- Ms. Ramya Shree B (ENG23CS0161), 3rd-year CSE student, successfully completed the course on “Market Research - Research Methodology” in the online Infosys Springboard platform on November 12, 2025.

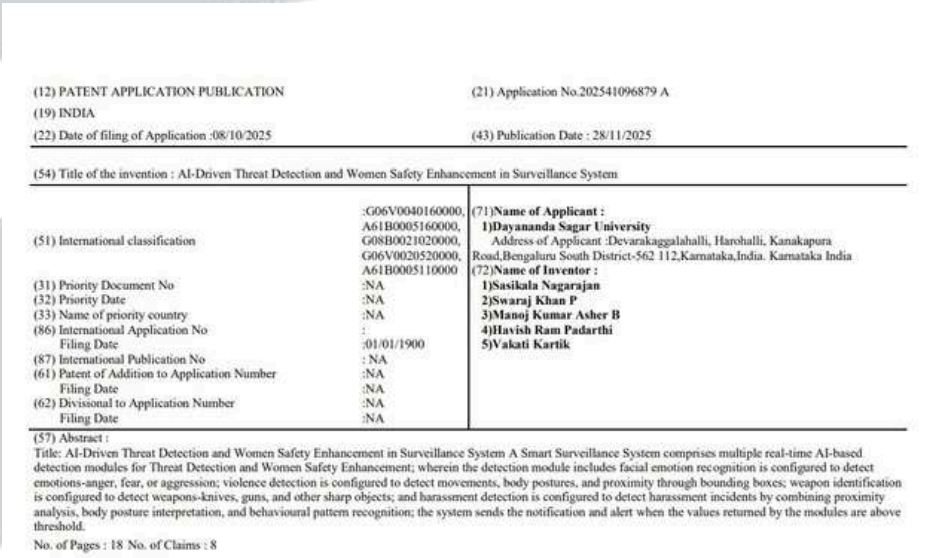
- Mr. Nithin Katariye V (ENG24CS0151), 2nd-year CSE student, participated and won Second Runner-up of the Prompt to Product Hackathon, held on the 21st and 22nd of November, organized by the School of Engineering, DSU, Harohalli.

- Ms. Marati Koushika (ENG24CS0779), Ms. Shreshtha Kalita, and Mr. Prajwal T (ENG24CS0788), 2nd-year CSE students, took part in the Sparda 3.0 Hackathon under the “PromptVerse” event at City Engineering College on 20th November 2025. The theme was Business, Productivity, and Innovation, and the Solution was StepZero, a Business Legal Aid platform that helps individuals navigate legal procedures easily, and won first place with a cash prize.

- Ms. Sayee Avinash Dahake (ENG23CS0448), 3rd year CSE student, successfully completed the 12-week course on “Cyber Security and Privacy” in the NPTEL exam, received Elite with 83% and topper 1% in the NPTEL exam during November 2025.



- Mr. Havish Ram P (ENG21CS0157), Mr. Swaraj Khan(ENG21CS0433), Mr. V Kartik(ENG21CS0456), Mr. Manoj Kumar Asher B(ENG21CS0221), 2025 completed batch of CSE students and Dr. Sasikala Nagarajan, Assistant Professor, Department of CSE has successfully published an Indian Patent titled “AI-Driven Threat Detection and Women Safety Enhancement in Surveillance System” in the field of Computer Science with the application no 202541096879 during 28th Nov 2025



(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/10/2025

(21) Application No.202541096879 A
(43) Publication Date : 28/11/2025

(54) Title of the invention : AI-Driven Threat Detection and Women Safety Enhancement in Surveillance System

(51) International classification	:G06V0040160000, A61B0005160000, G08B0021020000, G06V0020520000, A61B0005110000
(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 Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :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)Sasikala Nagarajan
2)Swaraj Khan P
3)Manoj Kumar Asher B
4)Havish Ram Padarthi
5)Vakati Kartik

(57) Abstract :
Title: AI-Driven Threat Detection and Women Safety Enhancement in Surveillance System A Smart Surveillance System comprises multiple real-time AI-based detection modules for Threat Detection and Women Safety Enhancement; wherein the detection module includes facial emotion recognition is configured to detect emotions-anger, fear, or aggression; violence detection is configured to detect movements, body postures, and proximity through bounding boxes; weapon identification is configured to detect weapons-knives, guns, and other sharp objects; and harassment detection is configured to detect harassment incidents by combining proximity analysis, body posture interpretation, and behavioural pattern recognition; the system sends the notification and alert when the values returned by the modules are above threshold.
No. of Pages : 18 No. of Claims : 8

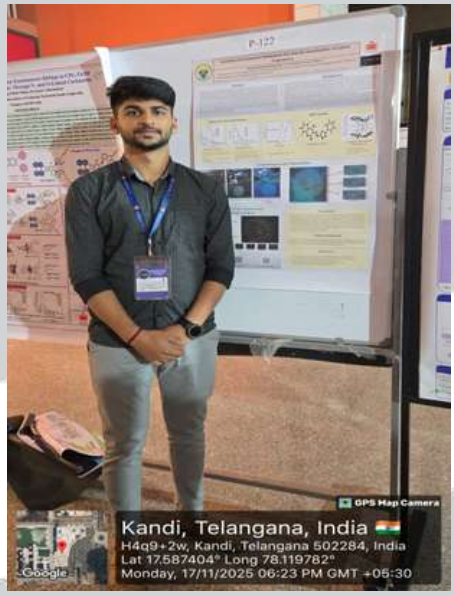
- The team, Ms. Sneha Namoshi (ENG24CT0070), Ms. Hema B M (ENG24CT0006), Ms. Sanjana U S (ENG24CT0018), Mr. Brahma Pruthvi (ENG24CT0003), emerged as 5th Place in the IoT Domain at the DESIGNATHON for their innovative project titled “TechXcel.”

- The team, Mr. Ahmed (ENG22CT0039), Ms. Nancy (ENG22CT0043), Mr. Satyam Pote (ENG23CT1002), and Mr. Ahmad Talawar (ENG23CT1001) won First Place at the Replit x Polaris School of Technology Vibeathon! As part of our prize, the entire team has won a sponsored trip to the Replit headquarters in San Francisco or 1 Lakhs cash prize.

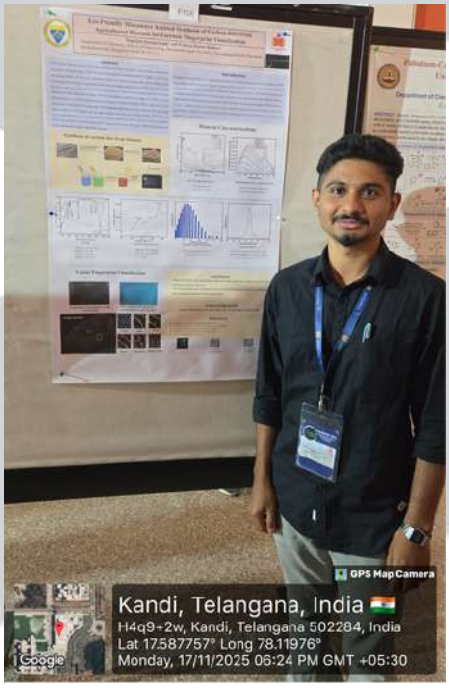
- Mr. Adeesh L. P(ENG22CY0025) has successfully earned the eJPT (Junior Penetration Tester) certification, awarded on 11th November 2025.

- Mr. Nagarjun S [ENG24PFBS01] presented his research paper titled “Sustainable Valorization of Agri-Biomass Waste into Fluorescent Carbon Dots” at the International Conference on Applied Sciences and Advanced Materials (ICASAM 2025) held at BMN Institute of Technology on 28th and 29th November 2025. His work received significant appreciation from the scientific community, and he was honored with the Best Paper Award for his oral presentation.

- Mr. Kishan B S [ENG24PFBS08] presented a poster titled “Luminescent Coumarin-Oxadiazole Azo Dye for Visualization of Latent Fingerprint”, at the Chemspirit 2025: Current and Future Trends in Chemical Synthesis conference, organized by IIT Hyderabad from 17th to 19th November 2025.



- Mr. Nagarjun S [ENG24PFBS01] presented a poster titled “Eco-Friendly Microwave Assisted Synthesis of Carbon Dots from Agricultural Biomass for Forensic Fingerprint Visualization” at the Chemspirit 2025-Current and Future Trends in Chemical Synthesis conference, organized by IIT Hyderabad from 17th to 19th November 2025.



EDITORIAL BOARD

MANAGING EDITOR

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

EDITOR - IN - CHIEF

Dr. M. Shahina Parveen
Professor & Chairperson,
Department of CST, DSU.

Faculty Co-Ordinator

Prof. M. Chithambarathanu
Assistant Professor
Department of CST, DSU.

Student Co-Ordinators

Pranati Biswal
Department of CST, DSU.

Sanmathi Y A
Department of CST, DSU.

Srushti S
Department of CST, DSU.

Nishant Kumar Dubey
Department of CST, DSU.

Rishav Aditya
Department of CST, DSU.

Ahmed Isa Zaweel
Department of CST, DSU.

Siddharth Kumar
Department of CST, DSU.

SCHOOL OF ENGINEERING

Devarakaggalahalli, Harohalli, Kanakpura Road,
Ramanagara Dt., Bengaluru-562112