



DAYANANDA SAGAR
UNIVERSITY



SCHOOL OF
ENGINEERING

SOE - "The Weekly Buzz"

The Official Weekly Newsletter of **School of Engineering**



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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

- Design and deliver contemporary engineering curricula to address regional and global needs while emphasizing ethics, values, integrity and regional relevance.
- 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.
- Develop regional and national leaders to advance the society and economy.

Faculty Contributions

Department Of Artificial Intelligence & Robotics

Dr. Rupam Bhaduri, Dr. Pramod Kumar Naik, Dr. Gangadhar TG, and Dr. Bharath Kumar S of AI and Robotics Engineering have contributed a research paper titled “Adaptive Control Strategy for Seamless Bidirectional Power Flow in Three-Phase Dual Active Bridge Converters for EV Fast Charging Applications” at the 10th International Conference on ICT for Sustainable Development (ICT4SD) held in Goa, India. The paper, focusing on advanced control strategies for efficient electric vehicle fast charging, has also been selected for publication in the ICT4SD Conference proceedings as per the guidelines issued by Springer which is a Scopus indexed International Conference.



Department Of Computer Science & Engineering

Dr. Nixon J S, Professor, Department of CSE has successfully participated and attended one week online FDP on the topic “Quantum Communication, Computing and its Applications” (QCCA-2025) from 7th to 12th July 2025 organized by Annant Gyan Knowledge and Skills Pvt Ltd.



Prof. Sushma. D.S, Assistant Professor, Department of CSE has successfully participated & completed AICTE Training And Learning (ATAL) Academy Faculty Development Program on AI-Driven Medical Image Fusion Analysis and Disease Prediction in Healthcare at Rajeev Institute of Technology from 14/07/2025 to 19/07/2025.



Dr. Renuka Devi M N, Assistant Professor, Department of CSE has successfully presented research Paper on "A CNN-GAN Integrated Framework for Enhanced Glaucoma Detection and Optic Cup Damage Estimation Using Fundus Images" at the NextGen Tech Conference 2025, held on 14-07-2025, organized by NextGen Tech Conference 2025.



Dr. Sivananda Reddy, Associate professor, Department of CSE has successfully published a research paper titled "FL-DPCSA: Federated learning with differential privacy for cache side-channel attack detection in edge-based smart grids" in the Q1 Journal (ScienceDirect) named e-Prime - Advances in Electrical Engineering, Electronics and Energy during July 2025.

Prof. Bharath B and Prof. Yashaswini H C, Assistant Professors, Department of CSE has successfully completed Faculty Enablement Program (FEP) on Python Programming using Infosys Springboard platform conducted by Infosys during 16th July 2025.



Department Of CSE (AIML)

Prof. Trupthi Rao, Assistant Professor, CSE (AI & ML) served as a Resource Person during the Five-Day Online Value Added Course on “Foundations of Machine Learning: A Mathematical Approach”, held from 14th to 18th July 2025, organized by the Department of CSE (AI & ML), School of Engineering, Dayananda Sagar University. She delivered an expert hands-on session on "Supervised Machine Learning", where students were introduced to core ML algorithms, their applications, and implementation techniques. The session was designed to bridge theoretical understanding with practical skills, helping participants gain confidence in building ML models.



Prof. Trupthi Rao, Assistant Professor, CSE (AI & ML), Prof. Trupthi Rao, Assistant Professor, Dept. of CSE (AI&ML) has participated in the 5-Day Faculty Development Programme on “Artificial Intelligence: From Fundamentals to Advanced Reasoning” from 10th to 15th July 2025 at T. John Institute of Technology, Bangalore, India.



Prof. S.V.K.R. Rajeswari, Assistant Professor, Department of CSE (AI & ML), served as a Resource Person during the Five-Day Online Value Added Course on “Foundations of Machine Learning: A Mathematical Approach”, organized by the Department of CSE (AI & ML), School of Engineering, Dayananda Sagar University from 14th to 18th July 2025. She delivered a series of expert sessions covering topics such as Introduction to AI and ML, types and systems of ML, the design and process flow of ML projects, applications of ML using sensor data, and the use of ML in industry through both lectures and hands-on sessions. Her sessions were well-received by the participants and successfully bridged theoretical foundations with practical insights, enabling students to better understand and apply machine learning techniques in real-world scenarios.



Department Of CSE (Cyber Security)

Prof.Naveen Kulkarni has successfully presented a research paper titled “SCAM-QUAVs: Side Channel Attacks Mitigation and Countermeasures of Quantum-Safe UAVs”at the IEEE International Conference on Electronics, Computing and Communication Technologies (IEEE CONECCT 2025), held from July 10–13, 2025 at Sterlings Mac Hotel, Bengaluru. The conference was organized by the IEEE Bangalore Section, and the paper presentation contributes to emerging research in quantum-safe cybersecurity for unmanned aerial vehicles (UAVs).



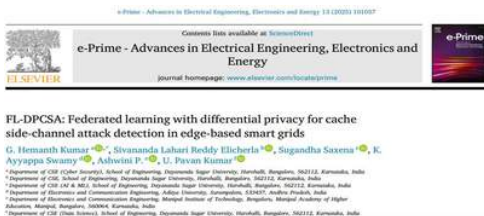
Prof.Archita Bhattacharyya has digitally presented a research paper titled “FBCA-IoMT: A Federated Binary Contrastive Autoencoder Framework for Anomaly Detection”at the 10th International Conference on ICT for Sustainable Development (ICT4SD 2025), held virtually from 17–19 July 2025, based in Goa, India. The presentation was part of a global academic platform focusing on the role of Information and Communication Technologies in achieving sustainable development goals. The event was supported by Springer Nature and several national and international industry partners.



Dr. Shaila S G presented a research paper entitled “A CNN-GAN Integrated Framework for Enhanced Glaucoma Detection and Optic Cup Damage Estimation Using Fundus Images” at the Next Gen Tech Conference 2025 held on 14-07-2025.



Dr. U. Pavan Kumar published a Q1 Journal title “FL-DPCSA: Federated learning with differential privacy for cache side-channel attack detection in edge-based smart grids” in e-Prime - Advances in Electrical Engineering, Electronics and Energy. July 2025



ARTICLE INFO

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ABSTRACT

Smart grid technology adoption at a fast pace has created new security vulnerabilities to cache side-channel attacks (CSA) which threaten both user privacy and grid stability through edge computing devices. The current centralized detection methods need complex raw data collection, which leads to privacy risks and scalability limitations. The proposed FFL framework provides distributed CSA detection across smart meters through a privacy-preserving federated learning approach that avoids data sharing. The solution uses differential privacy with $\epsilon = 1.0$ - 5.0 to secure aggregation and a lightweight CNN-LSTM model, which results in 96.7% detection accuracy while maintaining data confidentiality. Real-world smart meter datasets from US-CMAE and REDS, together with simulation tests, show that the framework operates efficiently (2.1 s training latency/round), has minimal communication overhead (1.2 MB/round), and remains resilient to adversarial attacks (4.8% accuracy drop under evasion attempts). The proposed framework demonstrates linear scalability to 10,000+ devices while using 2.7 kWh energy per round, which makes it suitable for extensive smart grid implementations that follow GDPR and NIST cybersecurity standards.

Dr. Santhosh Kumar G published a book title “Data Information and Security” by PENCIL BITZ publisher with ISBN: 978-93-48556-19-6 July 2025.

#	Book Title	ISBN	Product Form	Language	Applicant Type	Name of Publishing Agency/Publisher	Name of Author/Editor	Publication Date
1	Data Information and Security	978-93-48556-19-6	Book	English	Publisher	PENCIL BITZ	Author: Dr.G.Thangarasu, Co-Author: Dr.Santhosh Kumar G, Mr.Surindara Mohan S, Dr.Jathimani Parthasarathy	6/17/2025

Total Visitors: 907309

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Dr. Suresh A & . Prof. Megha Chandel for organizing & participating in the Five Days Faculty Development Program on “DevOps & MLOps” held from 30th June 2025 to 04th July 2025 organized by Department of CSE(Data Science), School of Engineering, Dayananda Sagar University.



Department Of Electronics & Communication Engineering

Dr. Arun Balodi, Professor and Chairman of the Department of Electronics and Communication Engineering at Dayananda Sagar University, Bengaluru, has been invited to join the Organizing Committee of the prestigious 3rd International Conference on Intelligent Computing and Robotics (ICICR 2026). This esteemed conference convenes leading experts in artificial intelligence, robotics, and intelligent systems from around the world. Dr. Balodi's participation underscores the department's dedication to advancing global research collaborations and academic excellence. His involvement will contribute to shaping an engaging and impactful conference experience for the international scholarly community.



Dr. Arun Balodi, Professor and Head of the Department of Electronics and Communication Engineering at Dayananda Sagar University, has been appointed to the Editorial Board of Scientific Reports, a renowned Q1 journal published by the Nature Portfolio. This distinguished recognition highlights Dr. Balodi's notable achievements in research and academia, as well as his ongoing dedication to promoting scientific excellence. His appointment underscores the university's commitment to advancing the frontiers of knowledge and fostering a culture of scholarly impact.

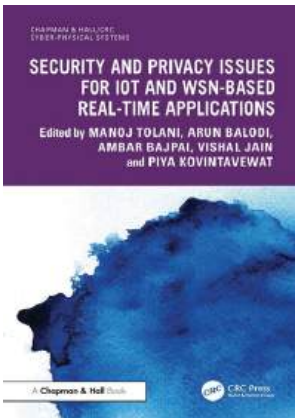


Dr. Arun Balodi, Professor and Chairman of the Department of Electronics and Communication Engineering at Dayananda Sagar University, Bengaluru, participated in the One-Week Workshop on Innovation, Sustainability & Leadership (WISL) 2025, held from July 14th to 18th. The workshop was organized by the IEEE Region 10 Adhoc Committee on Entrepreneurship & Innovation (ACEI) Ambassadors Team, in partnership with the IEEE Delhi Section and WIE Delhi Section AG, as part of the IEEE Delhi Section Golden Jubilee celebrations. The event featured insightful sessions led by prominent thought leaders and experts, providing a dynamic forum for exploring innovation, sustainable development, and leadership. Dr. Balodi's participation enabled engagement with a diverse network of professionals and innovators within the IEEE community. He expressed gratitude to the organizers and looks forward to leveraging the knowledge and perspectives gained during the workshop in his academic and professional endeavors.



Dr. Arun Balodi, Professor and Chairman of the Department of Electronics and Communication Engineering at Dayananda Sagar University, Bengaluru, has co-edited the recently published book titled "Security and Privacy Issues for IoT and WSN-Based Real-Time Applications." Released by CRC Press (Taylor & Francis), this book addresses the evolving security and privacy challenges in the domains of Internet of Things (IoT) and Wireless Sensor Networks (WSN) with an emphasis on real-time applications. The publication offers valuable perspectives and solutions for researchers, professionals, and practitioners engaged in the development and deployment of smart systems, highlighting Dr. Balodi's ongoing commitment to advancing knowledge in cutting-edge technology fields.

Dr. Pushpamala S, Associate Professor in the Department of Electronics and Communication Engineering at Dayananda Sagar University, Bengaluru, served as a Track Chair at the 11th International Conference on Electronics, Computing and Communication Technologies (IEEE CONECCT 2025), held from July 10–13, 2025, at Sterling’s Mac Hotel, Bangalore. Organized by the IEEE Bangalore Section, this esteemed conference convened leading researchers, academicians, and industry professionals from around the world. Dr. Pushpamala’s significant contribution as Track Chair was instrumental in the smooth and impactful execution of the event, underscoring her strong commitment to academic leadership and promoting excellence in technological advancement.



Departmental Activities

Department of Aerospace Engineering

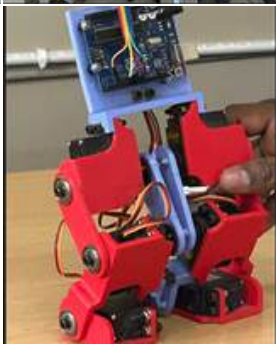
On 14th July 2025, Dayananda Sagar University had the privilege of hosting representatives from La Fondation Dassault Systèmes – Mr. Huzefa Salim, Executive Director, and Mr. Praveen Bhagoji, Senior Project Manager. Organized by the Department of Aerospace Engineering, School of Engineering, the visit aimed to strengthen ongoing academic-industry collaborations and discuss strategic initiatives for the future.

Key discussions centered around enhancing digital twin lab initiatives, future-focused research partnerships, and expanding student internship and exchange opportunities with global industry partners. The dialogue also explored curriculum enrichment aligned with Industry 4.0 and aerospace sector needs, support for entrepreneurship and student start-ups, infrastructure development, and joint efforts in research publications and grant proposals. The visit concluded with a technical review and assessment of outcomes from previous collaborations, reaffirming a shared commitment to nurturing innovation and empowering future-ready engineers.



Department Of Artificial Intelligence & Robotics

On 16th July 2025, the AI & Robotics department visited APS to review the DRDO-sponsored Humanoid Robot Development project, supported by APS Trust. The team witnessed a successful demonstration of the humanoid prototype, featuring advanced mechanical design and AI-driven capabilities using ROS 2, Python, and real-time vision systems. Engaging discussions highlighted collaborative innovation, key technical hurdles like synchronization, latency, and mobility optimization, as well as fruitful brainstorming on software and hardware enhancements. The visit underscored significant project progress and concluded with strategic recommendations for faster iterations and ongoing review, reaffirming the commitment to developing cutting-edge indigenous robotics solutions.



Department Of Computer Science & Engineering

On July 14, 2025, the Chairperson of the Department of Computer Science and Engineering (CSE) at the School of Engineering successfully conducted an orientation program for newly joined faculty members. The session aimed to familiarize the new faculty with the institutional framework and departmental expectations, covering key areas such as the history of Dayananda Sagar University (DSU), academic rules and regulations, research activities and teaching-learning practices, and effective usage of the ERP system. This comprehensive session provided valuable insights and served as a crucial platform to align the new faculty with the university's mission and departmental objectives.



Department of CSE (AIML)

The Department of CSE (AI & ML), School of Engineering, Dayananda Sagar University successfully organized a Five-Day Online Value Added Course titled “Foundations of Machine Learning: A Mathematical Approach” from 14th to 18th July 2025. The course, conducted via Zoom and mandatory for all 5th semester students, aimed to equip participants with a strong foundation in machine learning, combining essential mathematical concepts, Python programming, and real-world applications. A distinguished panel of experts delivered a blend of lectures and hands-on sessions covering key topics such as supervised learning, project design, computer vision, sensor data analytics, ROC/AUC analysis, trends in AI/ML, and cybersecurity applications. Notable speakers included Dr. Jayavrinda Vrindavanam, Dr. Bahubali Shiragapur, Dr. Durbadal, Dr. Meenakshi, Dr. Vegi Fernando, and other esteemed faculty members. The sessions were well-received and enriched students’ understanding, enabling them to build ML models and confidently pursue advanced projects in the field. Participants were awarded certificates upon completion of the course.

 <p>SCHOOL OF ENGINEERING</p> <p>Department of CSE (AI & ML)</p> <p>5-Day Value Added Course</p> <p>Foundations of Machine Learning: A Mathematical Approach</p> <p>📅 14 – 18 July 2025 🕒 9:30 AM – 4:40 PM 🖥️ Zoom (Online)</p> <p><i>Compulsory for all 5th Semester Students</i></p> <p>Convener Dr. Jayavrinda Vrindavanam</p> <p>Faculty Coordinators Prof. Ankita Thakkar Prof. Bhuvana Mohini</p>	<p>Course Objectives</p> <ul style="list-style-type: none">• Learn ML from the ground up from concept to code• Hands-on Python sessions• Math & stats simplified for AI/ML• Real-world projects & applications• Discover latest AI trends <p>Perfect for beginners & intermediates</p> <p>📜 Certificate of participation provided</p> <p>Speakers include:</p> <ul style="list-style-type: none">Dr. Jayavrinda VrindavanamDr. Bahubali ShiragapurDr. DurbadalDr. MeenakshiDr. Vegi FernandoDr. VinuthaDr. Abdul Haq NalbandDr. Prateek VermaDr. Mude Nagarjuna NaikDr. Sugandha SaxenaProf. Ankita ThakkarProf. Trupthi RaoProf. S.V.K.R. RajeswariProf. Bhuvana Mohini <p>Course Outcomes</p> <ul style="list-style-type: none">• Understand the basics of AI and Machine Learning• Use Python libraries to build simple ML models• Apply math and stats concepts in real ML problems• Explore how ML is used in industry and daily life• Build confidence to take up advanced ML projects	<p>14 July</p> <ul style="list-style-type: none">9:30 – 9:50 AM: Inauguration & Intro9:50 – 10:30 AM: Introduction to AI & ML10:30 – 11:30 AM: Evolution of AI and ML11:40 – 12:40 PM: Python Libraries – Hands-on1:30-4:40 PM: Python Libraries – Hands-on (contd.) <p>15 July</p> <ul style="list-style-type: none">9:30 – 11:30 AM: Mathematics for AI and ML11:40 – 12:40 PM: Statistics for AI and ML1:30 – 3:00 PM: Statistics for AI and ML (contd.)3:10 – 4:40 PM: Supervised Machine Learning – Hands on <p>16 July</p> <ul style="list-style-type: none">9:30 – 10:15 AM: ML Project Design10:15 – 11:30 AM: ML Applications using Sensor Data11:40 – 12:30 PM: Introduction to Computer Vision2:00 – 3:00 PM: Feature Extraction3:10 – 4:40 PM: Pattern Recognition <p>17 July</p> <ul style="list-style-type: none">9:30 – 11:00 AM: ML Models – Hands-on11:10 – 12:40 PM: ROC, AUC, Regularization1:30 – 3:00 PM: Trends in AI/ML3:10 – 4:40 PM: Cognitive Systems <p>18 July</p> <ul style="list-style-type: none">9:30 – 11:30 AM: ML in Industry11:40 – 1:10 PM: AI/ML Advances – Hands-on2:00 – 2:40 PM: ML for Cybersecurity2:40 – 3:00 PM: End Session Remarks
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The Department of Computer Science and Engineering (AI & ML), Dayananda Sagar University, in collaboration with Kroolo and The Generative Beings, successfully organized the “Future of Work” Hackathon on 19th and 20th July 2025 at the university’s Bengaluru campus. This high-energy, in-person event brought together developers, entrepreneurs, and AI enthusiasts for a weekend of innovation focused on generative AI. The hackathon was inaugurated by Dr. Jayavrinda Vrindavanam, Chairperson of CSE (AI & ML), followed by a keynote address from Mr. Shashank Singh, CEO of Kroolo, who shared valuable insights on the evolving role of AI in the future workplace. The presence of university leaders, including Dr. B.S. Satyanarayana, Vice Chancellor of DSU, added significance to the occasion. Participants worked on real-world problem statements, demonstrating exceptional creativity and technical acumen. With grand prizes of INR 1,00,000 and career opportunities at Kroolo, the event offered a highly rewarding platform for emerging talent to collaborate, compete, and envision the future of work.



Student Activities

Students from the Department of Aerospace Engineering participated in the Flight Readiness Workshop hosted by Nitte University from 15th to 17th July 2025. The workshop offered hands-on exposure to flight readiness models for Rocketry and CanSat systems. Sessions were led by distinguished experts including Dr. Vinod Kumar (IN-SPACe) and Mr. Sunny (STAR Labs). Faculty members Dr. Prasanthakumar H. G. and Prof. Sripad Kulkarni S. accompanied the team and contributed to academic discussions. A special Educator Cohort Meeting, featuring insights from Dr. Nagaraja S. R., enhanced the academic value of the event. The presence of dignitaries like Mr. Huzefa Salim (Dassault Systèmes La Fondation) added significance to the workshop.



Mr. Jayesh Ranjan (ENG23CS0326) , 3rd year CSE student, DSU-Ecell member has been sanctioned Project grant of ₹8,00,000 for the proposal titled "Development of low-cost reversible Hydrogen Fuel Cell Technology" under the NIDHI-PRAYAS Scheme by the Department of Science and Technology (DST), Government of India, and will be implemented through the DERBI Foundation during 15th July 2025.

Mr. Saikumar V Jadhav (ENG22CS0145) and Mr. Rahul H Jadvani (ENG22CS0129), 4th year CSE Students as team participated in Agentic Ethereum Hackathon India, held at Scaler School of Technology secured the 2nd Runner-Up position by winning a cash prize of Rs.1000 for the problem statement "DeFi + Financial Inclusion Agents", during 12th to 13th July 2025. The hackathon was open to global participants, with over 3000+ registrations, 250+ submissions, and 50+ finalist teams presenting live.

We are delighted to announce that Pratiksha Guggari (ECE), Rahul (CSE), and Sachin Pujappa Baluragi (CSE-CY) secured the 2nd Runner-Up position at the prestigious Agentic Ethereum Hackathon India, hosted by Scaler School of Technology on 12–13 July 2025. Their project, centered on "DeFi + Financial Inclusion Agents," demonstrated outstanding technical skill and creativity in developing innovative blockchain-based financial solutions. This achievement earned them a \$1000 cash prize and recognition among the nation's top Ethereum developers. Congratulations to the team for their remarkable accomplishment!



Prajwal N Halvi(ENG22CY0037) has successfully completed the UI/UX Course offered by Tutedude on 15th July 2025. Course covered essential aspects of user interface and user experience design.



Prajwal N Halvi, a student of CSE(CY)-SOE - DSU, has been recognized for the successful completion of the Figma Bootcamp organized by LetsUpgrade EdTech Pvt. Ltd. from 17th to 19th July 2025. The bootcamp, conducted in partnership with NSDC – National Skill Development Corporation, ITM Edutech Training Pvt. Ltd., and GDG MAD, offered intensive training focused on fundamental design concepts and hands-on experience with the Figma interface design tool. Prajwal’s active participation in this program reflects a strong commitment to developing practical skills in digital design and staying abreast of industry innovations.



Dev Sharma (ENG23EC0088), a student from the Electronics and Communication Engineering Department at Dayananda Sagar University, Bengaluru, has earned the prestigious Premium Milestone in the Google Cloud Arcade Program, a competitive and skill-focused initiative designed to provide hands-on experience with cloud technologies. Throughout the program, Dev Sharma showcased outstanding commitment and technical proficiency by successfully completing various practical labs, real-world challenges, and guided learning paths utilizing Google Cloud tools and services. This accomplishment signifies a major milestone in his development as a technology enthusiast and highlights his dedication to mastering cloud infrastructure, DevOps, and AI/ML on the Google Cloud platform. The university acknowledges Dev's achievement and anticipates his continued growth and contributions in the field of cloud innovation.



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