DAYANANDA SAGAR UNIVERSITY

ACCREDITED WITH GRADE A+ NAAC

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

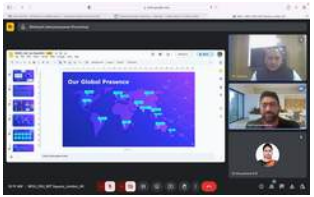
- Design and deliver contemporary engineering curricula to address regional and global needs while emphasizing ethics, values, integrity and regional relevance.

- 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.

“MIT Square & DSU Partner for Innovation and Growth”

Dayananda Sagar University (DSU), Bengaluru, signed a Memorandum of Understanding (MoU) with MIT Square Group of Companies, London, on 14th March 2025. The collaboration aims to establish a Centre of Excellence (CoE) for Technology Transfer Transformation (T3) at DSU, focusing on research, innovation, science, technology, and entrepreneurship. The partnership will facilitate value-added certifications, faculty and student development programs, industry collaborations, internships, and startup incubation support. Additionally, specialized training in emerging technologies such as Artificial Intelligence, Cybersecurity, IoT, Blockchain, Robotics, and Electric Vehicles will be offered. The MoU signing ceremony was graced by Dr. Puttamadappa C, Registrar, DSU; Dr. Udaya Kumar Reddy K R, Dean, School of Engineering, DSU; and key representatives from MIT Square, including Dr. Mithileysh Sathiyanarayanan (Founder & CEO), Bhuvaneshwari Loganathan (Co-founder & COO), and Sathiyanarayanan Kesavaraj (Co-founder & CFO). This collaboration marks a significant step toward enhancing research, innovation, and global academic-industry partnerships at DSU.



Faculty Contributions

Department Of Aerospace Engineering

Dr. B. V. N. Ramakumar, Professor in the Department of Aerospace Engineering, participated in a brainstorming workshop on futuristic technologies in aero engines held on March 11th at DIA-CoE, IIT Bombay. The workshop focused on research and development activities and future directions in Small Turbo Fan Engines. Dr. Ramakumar is a member of the Technical Evaluation Committee (TEC) constituted by DRDO. The event was attended by several DRDO scientists, faculty members from IITs, IISc, and other leading institutions, who engaged in discussions on the future of gas turbine technology.

A research study titled "Exploring Dynamic Mode Decomposition Technique for Analyses of Transonic Shock Oscillations on a Typical Launch Vehicle Model" by Dr. G. K. Suryanarayana from the Department of Aerospace Engineering, School of Engineering (SOE), Dayananda Sagar University (DSU), has been published in Lecture Notes in Mechanical Engineering by Springer Nature Singapore on 16 March 2025. The study investigates transonic flow development over the payload region of a generic launch vehicle model, focusing on the effects of varying the semi-nose cone angle between 15° and 25°. Utilizing high-speed shadowgraph imaging and pressure sensor data, the research employs the Dynamic Mode Decomposition (DMD) technique to analyze pressure fluctuations and shock oscillations. The findings indicate that for certain Mach numbers and angles of attack, large pressure amplifications occur, significantly impacting aerodynamic stability. This study contributes valuable insights into launch vehicle aerodynamics, offering potential improvements in flow diagnostics and predictive modeling for complex nonlinear flow phenomena.

Department Of Electronics and Communication Engineering

We are delighted to share that Prof. Puneeth S., Assistant Professor in the Department of Electronics and Communication Engineering, School of Engineering, Dayananda Sagar University, has co-authored a research paper titled "Integrating Beetle Swarm Optimization into Cross-Layer Routing for Improved QoS in Cluster-Based WSNs". Presented at the 2024 IEEE 4th International Conference, the paper explores enhancing the efficiency of cluster-based wireless sensor networks (WSNs) using Beetle Swarm Optimization (BSO) combined with an improved Dynamic Source Routing (DSR) approach. This research contributes to optimizing energy consumption, network bandwidth, and routing efficiency, showcasing the department's dedication to innovation in wireless communication and IoT networking. Congratulations to Puneeth S. and the research team for their significant achievement.

Conferences > 2024 IEEE 4th International C...

Integrating Beetle Swarm Optimization into Cross-Layer Routing for Improved Qos In Cluster-Based Wsns

Publisher: IEEE | Cite This | PDF

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Abstract

Document Sections

I. INTRODUCTION

II. RELATED WORKS

III. PROPOSED METHODOLOGY

IV. RESULT

V. CONCLUSION

Abstract:

An overview of cross-layer architecture and quality-of-service optimizing for router is provided, with a focus on improving the efficiency of cluster oriented wireless sensors via the integration of the Beetle Swarm Optimization (BSO) method with the enhanced Dynamic Source Routing (DSR) approach. Cross Layer Design (CLD) is the name of the suggested approach; in this, processing restrictions related to energy are taken into primary consideration. While the IEEE 802.11 (Wi-Fi) standard was evaluated as a gateway in Chapter 3, it does have a few drawbacks, such as the fact that it can only handle small networks and that every router has only a certain amount of battery capacity. Thus, for the sake of cross-layer layout, this component takes into account the ZigBee/IEEE 802.15.4 (WPAN) wirelessly personalized area network design. A number of settings are adjusted to enhance the wireless sensor network's efficiency depending on the ZigBee structure of layers. Power from batteries is the main focus of the physical component. The media access control (MAC) layer handles packet sequencing and bandwidth that is available. Both the transmission and network layers are responsible for controlling overcrowding. The networking layer handles routable technologies. This chapter concludes, in its experimental part, that the suggested strategy improves the

Dr. Arun Balodi, Chairman and Professor in the Department of Electronics and Communication Engineering at Dayananda Sagar University, Bengaluru, delivered an insightful session on "Biomedical Signal Processing: Decoding Physiological Data" at IEEE St. Joseph's College of Engineering Student Branch (SJCE SB), Chennai, on March 15, 2025. Organized in collaboration with the IEEE Solid-State Circuits Society (SSCS) SJCE and IEEE Bangalore and Madras Sections, the session provided students with a comprehensive understanding of biomedical signal processing techniques and their applications in healthcare. Dr. Balodi engaged with students through thought-provoking discussions, addressing their queries and exploring real-world implementations of signal processing in medical diagnostics. The event's success was marked by enthusiastic participation, making it a highly interactive and enriching experience. Special appreciation goes to Ms. Swathi K, Chairperson of IEEE SSCS and IEEE SJCE SB, and her team for their impeccable coordination. This initiative underscores DSU ECE's dedication to fostering knowledge exchange and strengthening industry-academia collaborations in cutting-edge engineering domains.

Department Of Computer Science and Engineering

Dr Rajesh T M, Associate Professor and Prof Shankramma S Dhavalagimath, Research Scholar, Dept of CSE, has published a paper titled “Advancements in Image Deblurring and Performance Metrics Using Deep Learning Technique” in the Springer Nature Lecture Notes in Networks and Systems, Proceedings of International Conference on Recent Trends in Computing, during March 2025. https://doi.org/10.1007/978-981-97-8836-1_12.

Dr. U. Pavan Kumar has participated and presented a research paper title: Privacy-preserving Federated Learning for Equipment Failure Detection in Smart Manufacturing at 7th International Conference on Intelligent Sustainable Systems - ICISS 2025 Organized by SCAD College of Engineering and Technology (SCADCET) during 12-14, March 2025 | Tirunelveli, India

Department Of CSE (AIML)

Dr. Shreyas Rajendra Hole & Dr. Jayavrinda Vrindavanam, Assistant Professor & Professor, Dept. of CSE (AI&ML), published a journal titled “An efficient Quantum-Enhanced Ensemble Fault Detection for Solar Energy Integration using an Iterative Game-Theoretic Approach with Adaptive Neuro-Fuzzy Inference and Energy Storage”

Journal Name: Solar Energy and Sustainable Development

DOI: https://doi.org/10.51646/jsesd.v14i1.489

Dr. Vegi Fernando A, Associate Professor, Dept. of CSE (AI&ML), has successfully presented a paper entitled “RhinoGuardNet: An Integrated Deep Learning System for Monitoring, Movement Prediction, and Threat Detection in Javan Rhino Conservation” at the 2nd International Conference on Machine Learning and Autonomous Systems (ICMLAS 2025) organised by Stamford International University Bangkok, Thailand on 10-12th March 2025.

Department Of Computer Science and Technology

Prof. Junaid, Dr. Nivetha NRP & Prof. Vinayaka VM has participated in a one-day online Faculty Training Session on “Software Engineering Using LLMs – Developing a Forecasting Solution” organised by the Department of Artificial Intelligence and Machine Learning, CRIA and School of Computer Applications conducted on 12th March, 2025 at Dayananda Sagar University, Bangalore.

Department Of CSE(Cyber Security)

Dr. Durbadal Chattaraj and Dr. D. Sumathi have successfully participated in the Faculty Training Session on “Software Engineering Using LLMs – Developing a Forecasting Solution” conducted on 12th March 2025 at Dayananda Sagar University. This session was facilitated by Dr. J.B. Simha, CTO, Abiba Systems, Bengaluru, and focused on the transformative applications of Large Language Models (LLMs) in software engineering and forecasting solutions.

Department Of CSE (Data Science)

Dr. Shaila S G, Dr. U. Pavan Kumar, Prof. Godhandaraman T and Prof. Prapti Bhattacharjee, CSE (Data Science), SOE & has successfully Participated in the Faculty Training Session on “Software Engineering Using LLM’s-Developing a Forecasting Solution” Conducted on 12th March 2025 at Dayananda Sagar University.


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In Association with
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Departmental Activities

Department Of CSE (AIML)

The Department of CSE (AI & ML) at Dayananda Sagar University successfully organized an interdepartmental chess tournament on March 11, 2025, at A508, SOE, DSU. The event witnessed 23 enthusiastic participants from the 4th and 6th semesters, who engaged in a thrilling Over The Board (OTB) Swiss-style tournament with five rounds. The competition featured a three-way tiebreaker for the first-place ranking, adding to the excitement of the final matches. With a time control of 10+2 for Swiss rounds and 5+2 for tiebreakers, players demonstrated remarkable strategic thinking and sportsmanship. The event provided students with a platform to hone their chess skills, build connections, and enjoy a friendly yet competitive atmosphere. We extend our heartfelt congratulations to the winners—First Place: Pritam Wani (ENG23AM0262), Second Place: Sangagond Dnyaneshwar (ENG22AM0054), and Third Place: Thenesh RGS Marriboyina (ENG22AM0196)—and express gratitude to all participants, organizers, and supporters for making this event a grand success.

The Department of CSE (AI & ML), in collaboration with the Center for Research and Innovation in AI (CRIA) and the School of Computer Applications, successfully conducted a Faculty Training on Large Language Models (LLMs) on March 12, 2025. The event, titled “Software Engineering Using LLMs – Developing a Forecasting Solution,” was led by Dr. J. B. Simha, CTO of Abiba Systems, Bengaluru, and focused on the role of LLMs in software engineering and predictive analytics. The session explored how LLMs enhance automation, improve forecasting accuracy, and optimize decision-making in various applications.

Dr. Jayavrinda Vrindavanam (Chairperson, Dept. of CSE - AI & ML), Dr. Udaya Kumar Reddy (Dean, SOE), and Dr. Sentil (Dean, School of Computer Applications) emphasized the growing significance of LLMs in modern AI applications. Dr. Simha provided deep insights into LLM architectures, data representation techniques, learning methods (supervised, unsupervised, iterative), and reasoning approaches (probabilistic, approximate). He also introduced ARIMA and Fuzzy Time Series models for forecasting.

A hands-on session introduced participants to Shiny, an R-based framework for interactive data visualization, demonstrating its application in forecasting dashboards. The workshop encouraged engaging discussions on AI-driven forecasting solutions and ethical challenges in LLM adoption. The event concluded with a vote of thanks by Dr. Vinutha, appreciating the expert insights and active faculty participation. This training reinforced DSU’s commitment to fostering AI-driven innovation and research excellence.

Department Of Computer Science and Technology

The Innovation, Patent drafting and Startup Registration workshop was conducted on 3rd, 10th and 11th March 2025 and over 120 students from 4th and 6th sem attended the workshop. In the workshop the students were given the opportunity to choose their interested area and identify problems. The entire strength of students were divided into groups and addressed each group with their problem statement. Resource person was very happy to see the active involvement of all the students giving the problem solution. The innovation disclosure form was shared to students where a resource person and his team explained the different fields in the form, and students started working on their respective problem statement. The session concluded with participants completing the Innovation Disclosure Form, which was reviewed by the resource person, Pranav Bhat, and his team. The top two ideas were awarded, while other innovations were evaluated for potential patent filing.

Department Of CSE (Data Science)

The DataScience@DSU Club, under the IEEE Information Theory Society student chapter of the Department of CSE (Data Science), successfully organized a hands-on workshop on "Industrial IoT for Automation" from March 10th to 12th, 2025. Led by Dr. Shaila S G, Prof. Mahendra M K, and Prof. Chandrakala L, with support from dedicated student volunteers, the workshop saw the participation of over 150 students. Experts from Karunadu Technologies Pvt. Ltd., including Mr. Mahesh Deginal (CEO), Mr. Harish (CTO), and Mr. Nithesh Kumar (Software Engineer), guided the participants through interactive sessions on microcontroller programming, sensor integration, and IoT-based automation. The workshop offered valuable hands-on experience, fostering innovation and inspiring potential mini-projects in industrial automation.

Student Activities

Second year student of the Artificial Intelligence and Robotics Department, Nilesh Sarkar (ENG23RA0038) has actively participated in the Microsoft AI and Chai Sip, Learn, Innovate organized by TechNexus Community on 15-03-2025 at Microsoft, Bangalore.

Second year students of the Artificial Intelligence and Robotics Department, A Kamalini Reddy (ENG23RA0048) & Vrinda Katavkar(ENG23RA0024), Mr. Muzammil (ENG23CS0120) and for successfully participating in the Photography Workshop conducted by Harsha Narasimhamurthy organized by Le Gras Boulevard Photography Club, Dayananda Sagar University on the 14th of March, 2025

Faculties & Students Achievements

Dayananda Sagar University (DSU) is proud to announce that student projects from our institution have been selected for sponsorship under the 48th series of the Student Project Programme (SPP) by the Karnataka State Council for Science and Technology (KSCST). This recognition highlights the innovative research and dedication of our students in contributing to scientific and technological advancements. The sponsored projects have been officially listed on the KSCST website. DSU has received a total grant of Rs. 81,500/- for the selected projects, further supporting student-led research and development. To facilitate the smooth disbursement of funds, the necessary banking details of the institution have been submitted as per KSCST guidelines. The completion of project-related formalities and submission of the utilization certificate will be coordinated through the university's Single Point of Contact (SPOC), Prof. Sripad from the AE Department. We extend our congratulations to the students and faculty mentors for their efforts and achievements in this prestigious program.

KARNATAKA STATE COUNCIL FOR SCIENCE AND TECHNOLOGY

48th series of Student Project Programme (SPP): 2024-25

List of Student Project Proposals Approved for Sponsorship

State Level Walkathon organized by Youth Red Cross Wing of the Indian Red Cross Society, Karnataka Branch - 2024-2025

Dayananda Sagar University (DSU) actively participated in the State Level Walkathon organized by the Youth Red Cross Wing of the Indian Red Cross Society, Karnataka Branch, on 12th March 2025. Themed "Walk for Humanity," the event aimed to raise awareness about blood donation and the importance of humanitarian service. The walkathon commenced at Bengaluru City University, Central College Campus, and concluded at Kanteerava Stadium. Students and faculty from the School of Engineering (SOE) enthusiastically participated in the event, demonstrating their commitment to social responsibility. Various departments, including Computer Science and Engineering (CSE), CSE (Data Science), CSE (Cyber Security), and Computer Science and Technology (CST), contributed by deputing students for the initiative. The event provided a valuable platform for students to engage with peers from different institutions, fostering a spirit of community service and collaboration. DSU's participation highlighted its dedication to instilling humanitarian values and social awareness among its students and faculty.


On March 14, 2025, the Happiness Club of the School of Engineering, Harohalli Campus, organized an engaging Art and Music Therapy session aimed at promoting mental well-being among students and faculty. The event featured guided music meditation, live instrumental performances on the flute and guitar, semi-classical singing, and creative painting and sketching activities. Over 60 participants embraced the opportunity to de-stress, express themselves, and reconnect with their creative sides. The session fostered a sense of community, emotional support, and relaxation, making it a refreshing break from the usual academic routine. The positive feedback highlighted the significance of creative therapies in maintaining emotional balance, and the Happiness Club looks forward to hosting more such events.

Bharat Kumar (ENG23DS0005) and Mithilesh N A (ENG23DS0110) successfully participated in a three-day hands-on workshop on "Industrial IoT for Automation" organized by the Department of CSE (Data Science), DSU, in association with Karunadu Technologies Private Limited, Bengaluru, from 10th March to 12th March 2025.

Le Gras Boulevard, a student photography club, successfully organized a Photography Workshop on March 14, 2025, at Harohalli, SOE. The event featured Mr. Harsha Narasimhamurthy, the Founder of Catman Kronicles, a Zeiss & Leofoto Influencer, as the resource person. Mr. Narasimhamurthy, a renowned mentor and wildlife photographer, shared valuable insights into the fundamentals of photography, inspiring participants with his expertise and experiences. The workshop was made possible through the dedicated efforts of student coordinators Mr. Likith Neeraj Reddy (CSE(CY) SOE), Mr. Harsh Manalel (CSE(AIML) SOE) and Mr. Rishi Rohan (CSE, SOE), along with faculty coordinators Prof. Arjun Krishnamurthy (CSE, DSU), Prof. Vishwas D. B. (CSE, SOE), and Mr. Santosh S. S. (Administration). The event saw an enthusiastic response from students, who actively engaged in learning the basics of photography and expressed keen interest in further exploring the field through future workshops. The workshop was a resounding success, fostering creativity and technical understanding among participants.

SCHOOL OF ENGINEERING

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