



**SCHOOL OF
ENGINEERING**

Dayananda Sagar
is backed by a

**Seven-Decade
Legacy**

in Education & Healthcare

SOE-BULLETIN

The Official Newsletter of **School of Engineering**



JUNE 2025

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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

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

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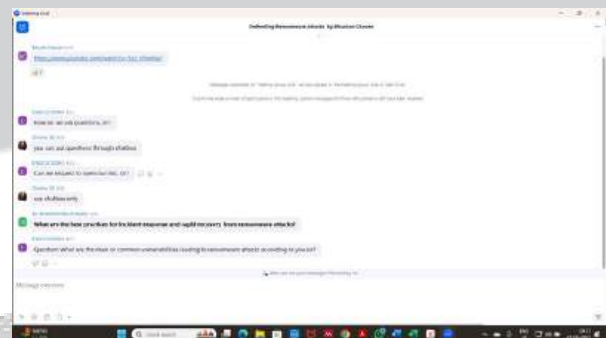
SCHOOL OF ENGINEERING



INTERNATIONAL ACTIVITIES

“Defending Ransomware Attacks”

The Department of Computer Science and Engineering, School of Engineering, Dayananda Sagar University, hosted an expert lecture on “Defending Ransomware Attacks” on 27th June 2025 via Zoom. The session was led by Mr. Bhushan Chavan, Director – Technical Architect at MGM Resorts International, USA, a cybersecurity expert with over 20 years of global experience and certifications including CISM, CISA, and CEH. Mr. Chavan delivered an insightful talk covering the evolution and anatomy of ransomware attacks, along with real-world case studies from his work in IAM restructuring post-breach. He highlighted best practices for prevention, detection, and response, and emphasized the role of Privileged Access Management (CyberArk), segregation of duties, and cloud-native IAM frameworks using SailPoint and Azure. The session also explored secure access solutions such as Yubikey, RBAC enforcement, and the importance of SOX compliance and audit readiness. Attended by students, faculty, and cybersecurity enthusiasts, the lecture offered valuable real-world insights and reinforced the significance of robust cybersecurity measures in today’s digital landscape.



Expert lecture on - “From Raw Data to Real Impact: Securing and Scaling Healthcare Data Pipelines for U.S. Healthcare Insurance”

The Department of Computer Science and Engineering, School of Engineering, Dayananda Sagar University, organized a highly insightful industry expert lecture on Friday, 20th June 2025, at 10:00 AM. The session was delivered by Mr. Rakesh Pai, an accomplished Data Engineering Manager at eviCore Healthcare (Cigna Group), USA. The lecture was part of the department's ongoing initiative to expose students and faculty to real-world applications of data engineering in critical domains like healthcare. Mr. Rakesh Pai began the session by offering a comprehensive overview of the U.S. healthcare ecosystem, emphasizing its complexity and the regulatory environment. He contextualized the role of data engineering in this sector and explained how scalable and secure data pipelines are essential for delivering value-based care. Mr. Pai also provided live architectural diagrams and referenced current tools and platforms used in production-grade systems. The lecture successfully bridged the gap between academic learning and industry practices in the evolving domain of healthcare data systems. The department extends its heartfelt gratitude to Mr. Rakesh Pai for his valuable time and impactful session. His deep technical insights and real-world examples served as a strong motivator for the audience and provided practical exposure to global industry standards.

DAYANANDA SAGAR UNIVERSITY
Devarakaggalahalli, Harohalli,
Kanakapura Road, Bengaluru – 562112
SCHOOL OF ENGINEERING
DEPT. OF COMPUTER SCIENCE & ENGINEERING
ACCREDITED WITH GRADE **A+** NAAC

Organises Industry Expert Lecture On
From Raw Data To Real Impact
Securing & Scaling Healthcare Data Pipelines For U.S. Healthcare Insurance

Mr. RAKESH PAI
Data Engineering Sr. Manager
eviCore Healthcare (Cigna Group), Franklin, Tennessee, USA
pai@hartford.edu

Organized By
Dr. TANVIR H SARDAR & Prof. BHARATH M B
Intended Audience
PG & UG - FACULTY & STUDENTS

20th June 2025
Friday, 10 AM
Venue: ONLINE

Please click here to join the Zoom Meeting
Meeting ID: 965 9648 2688 Passcode: 387774

My Bio

Professional Background

- Data Engineering Sr Manager at eviCore Healthcare (Cigna Group)
- MBA in Business Analytics
- 16+ years in IT, 12 years in data engineering
- Azure, Databricks, and healthcare data security expert

Expertise & Focus

- Building secure healthcare data pipelines
- Leading AI-driven healthcare solutions
- Working with patient, provider, and claims data
- Delivering Business critical data

US Health Insurance Types

- HMO**
Network restricted, PCP required, lower premiums
- PPO**
Flexible network, higher premiums, no referrals needed
- EPO**
In-network only except emergencies, no PCP requirement
- HDHP**
High deductibles, HSA eligible, lowest premiums



“Autodesk Fusion Insider Build Testing Event”

The Autodesk Fusion Insider Build Testing Event, held at Dayananda Sagar University from 25th to 30th April 2025, was a highly successful and impactful initiative. This collaborative effort with Autodesk provided 34 shortlisted students with a unique opportunity to gain hands-on experience with upcoming features of the Autodesk Fusion Design and Make software. Students participated in a series of structured sessions, where they explored pre-release tools, understood their practical applications, tested performance, and provided valuable feedback directly to Autodesk’s development team. Their engagement throughout the event was commendable, showcasing strong analytical thinking and technical aptitude. The event played a vital role in deepening students’ practical understanding of product design workflows and introducing them to professional software development cycles. By working with real-time builds, students gained confidence and improved their industry readiness in mechanical design and engineering domains. Additionally, the event significantly enriched students’ employability by familiarizing them with cutting-edge design technology. All participants were awarded certificates of participation in recognition of their involvement in shaping the future of Autodesk Fusion. The top five student projects were recognized for their creativity, functionality, and innovation, making the event an excellent platform for nurturing engineering talent and fostering academic-industry collaboration.



AUTODESK FUSION
INSIDER BUILD TESTING

 **25th to 30th April 2025**
9:00 AM – 4:00 PM

 **DSU Campus**

 **Eligibility:**
B.Tech students of Mechanical and Aerospace Engineering with intermediate proficiency in Autodesk Fusion 360 software



Participants will receive Autodesk certificates, and prizes will be awarded for top 5 best designs.

 **AUTODESK**

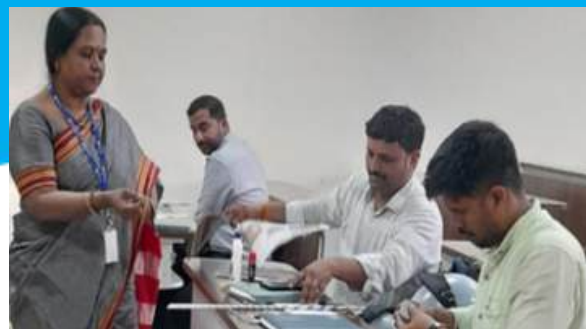
 **DAYANANDA SAGAR UNIVERSITY**

Event Coordinator:
Dr. Shashidhar L.C.
Manager, Autodesk Design & Innovation Lab, DSU



“Soft skill training”

Mr. Vijay Kumar, Director-Training & Corporate relations along with Dr. Seema Tharannum and Dr. Sreemathy V conducted a 5 day of “Soft skill training” for the Supervisors of Buhler India Pvt. Ltd. at DSU, Harohalli campus on 23,24,25,26 and 28th June 2025. The employees were trained on topics like Communication & Presentation Skills, Time Management, Interpersonal Skills, Team Management, Duties, Responsibilities & Accountability, Ethical Principles & Behaviour, Workplace etiquette, discipline & Organizational Development, Problem Solving, Critical Thinking & Decision-Making, Computer application, Professionalism and personality development. Training included theory, practice, demonstrations, assignments, and activities. The participants were issued certificates on the successful completion of training.





SCHOOL OF ENGINEERING



WEBINARS / SEMINARS / TECHNICAL TALKS

“Neo Lab Evaluations Tool”

The Department of Computer Science and Engineering, SoE, Dayananda Sagar University successfully conducted Short – Duration Lecture on the Neo Lab Evaluations Tool was conducted in Lab No. A406 K.Chidananda Gowda Common Computer Centre 2, at 11.00 pm on 12.06.2025. Arun KK and his Team from IamNeo Private Ltd gave a demonstration on the NEO Lab Evaluation Tool. The Team demonstrated Course content customization, Conduct of Assessments / Quizzes and related Analytics, and Programming to our faculty and Staff.





SCHOOL OF ENGINEERING



EVENTS: PROFESSIONAL SOCIETIES / CLUB ACTIVITIES

Samavarthana 2025: Farewell Ceremony for the Graduating Batch 2025

Samavarthana 2025, the farewell ceremony organized for the outgoing graduating batch of 2025, was held with great reverence and enthusiasm. The event served as a formal send-off and a celebration of the years of academic pursuit, personal growth, and institutional affiliation experienced by the students. The ceremony was organized under the aegis of the university administration, with meticulous planning to ensure that the event struck a balance between solemnity and celebration. The program began with the formal inaugural proceedings, marked by the lighting of the ceremonial lamp, which symbolized the dispelling of darkness and the ushering in of a new beginning for the graduating students. The gathering was honoured by the presence of eminent dignitaries including the Vice Chancellor, the Pro Vice Chancellor, and the Registrar of the university. The highlight of the formal session was the presence of two distinguished chief guests – Mr. Sudhir Udayakanth and Mr. Krishna Bhakar – both of whom have made notable contributions in their respective professional fields. Their addresses were deeply inspiring, offering insightful reflections on life beyond university, the value of perseverance, and the importance of maintaining integrity in personal and professional pursuits. The Vice Chancellor and other university leaders also addressed the audience, expressing their heartfelt appreciation for the graduating cohort's contributions to the university community and encouraging them to remain connected to their alma mater. Samavarthana 2025 stood as a fitting tribute to the graduating batch, marked by dignity, inspiration, and exuberance. It will undoubtedly remain a cherished milestone in the journey of the graduating class of 2025.





“MoU Signing Between Dayananda Sagar University and IBM India Pvt. Ltd”

Dayananda Sagar University (DSU) entered into a strategic academic partnership with IBM India Pvt. Ltd. through a Memorandum of Understanding (MoU) signed on 30th May 2025. The event marked a significant milestone in DSU's commitment to transforming its engineering education ecosystem through industry-integrated and future-ready learning pathways. The ceremony was graced by the presence of senior leadership from both DSU and IBM, including the Hon'ble Vice Chancellor, Pro Vice-Chancellor, Dean of Engineering, Registrar, Chairperson of AI&ML, and IBM representatives. This collaboration aims to bridge the academia-industry gap by embedding IBM's cutting-edge technologies and global best practices into DSU's engineering curriculum. This partnership is a major step forward in aligning academic outcomes with industry expectations and equipping students with the skills necessary to thrive in a technology-driven future.



“XBOOM- UNITREE Dignitaries Visit Dayananda Sagar University for Potential Collaboration”

Dignitaries from XBOOM-UNITREE visited Dayananda Sagar University (DSU) to explore potential collaborations with AI & Robotics, at DSU. This visit marks a significant step toward fostering innovation and technological advancements through academia-industry partnerships. XBOOM-UNITREE is an innovative Indian technology company specializing in drones, robotics, AI, and IoT solutions, offering products ranging from industrial automation systems to educational STEM kits. Known for its cutting-edge advancements, XBOOM-UNITREE bridges industry and academia by collaborating with institutions like Dayananda Sagar University to drive research, skill development, and real-world tech applications. With a mission to democratize automation and smart technology, the company provides tailored solutions for sectors like agriculture, surveillance, and education, positioning itself as a key player in India's technological transformation through its focus on affordability, scalability, and hands-on learning.



“Special Interest Group (SIG) – Space Technologies ” - Aerospace

The Special Interest Group (SIG) on Space Technologies convened a strategic meeting with core faculty members and technical leads to evaluate current projects and chart out future research directions. The session emphasized enhancing institutional capabilities, fostering collaborations, and increasing student participation in space-related endeavors. The discussion began with a comprehensive review of the existing infrastructure, particularly the operational status of laboratories and workstations. These facilities play a crucial role in simulating satellite systems and assembling payload modules, supporting ongoing research and development activities. Progress updates were provided on current research efforts, particularly in the development and qualification of CubeSats and the integration of RF systems. The group acknowledged the value of active collaborations with organizations such as ISRO, Ananth Technologies, Dhruva Aerospace, and various start-ups, which enable joint testing, validation, and efficient resource sharing. Future focus areas were identified, with an emphasis on exploring AI-driven satellite systems, orbital communication technologies, high-temperature coating materials, and advanced testing methods. Emerging interests include space robotics, autonomous UAVs for ground-based support, and solar power harvesting techniques for space applications. The meeting also highlighted the importance of outreach and student engagement. Plans were formulated to involve more students in SIG-led missions involving CubeSats and UAVs, as well as to organize workshops and inter-university hackathons.



“SIG Data Engineering & Vision Analytics” - CSE(DS)

The Department of CSE (Data Science), School of Engineering, Dayananda Sagar University, organized a Special Interest Group (SIG) meeting on Vision Analytics and Data Engineering on 20th June 2025 in Rooms A-106 and A-107. The session began with an address by Chairperson Dr. Shaila S G, followed by presentations from Dr. Suresh A (Lead – Data Engineering) and Dr. U. Pavan Kumar (Lead – Vision Analytics), who outlined the goals and focus areas of their respective SIGs. The meeting explored the convergence of Vision Analytics and Data Engineering, showcasing their combined impact on industries such as healthcare, autonomous systems, security, and retail. Discussions focused on managing large-scale visual data through automated pipelines like Apache Kafka and AWS Kinesis, and storage systems such as AWS S3 and Hadoop HDFS. Techniques like image augmentation, normalization, PCA, and autoencoders were highlighted for refining raw data and optimizing model performance. The analytics segment covered deep learning methods, including CNNs, transformer models, and tools like YOLO and Mask R-CNN for tasks such as object detection, facial recognition, emotion analysis, and anomaly detection. The session reinforced the critical role of these technologies in enabling intelligent, real-time decision-making across domains.



“SIG Meeting : Inter-Institutional Collaboration on Emerging Technologies ” - AI&R

Dr. Pramod Kumar Naik (Chairman, Dept. of AI & Robotics, DSU): Presented an insightful overview of Dayananda Sagar University's (DSU) cutting-edge facilities and infrastructure dedicated to Robotics and AI research. This presentation highlighted the resources available to support advanced projects. Dr. R. Bhaduri discussed his ongoing research, emphasizing potential synergies with the Department of Robotics and AI at DSCE. His work likely aligns with areas such as Control Systems, AI/ML Techniques, and Robotic Vision (as per his profile). Dr. Gangadhar T.G. presented his current research, outlining specific areas for collaboration. His expertise in Composites, Finite Element Analysis, and possibly the application of these in robotics or smart manufacturing, could be highly valuable. Dr. Bharath Kumar. s: shared insights into his research work, identifying opportunities for inter-institutional projects. His background in Machine Learning, particularly for performance prediction and processing industries, offers strong collaborative potential with DSCE's AI and Robotics efforts.



“Special Interest Group (SIG)” - ECE

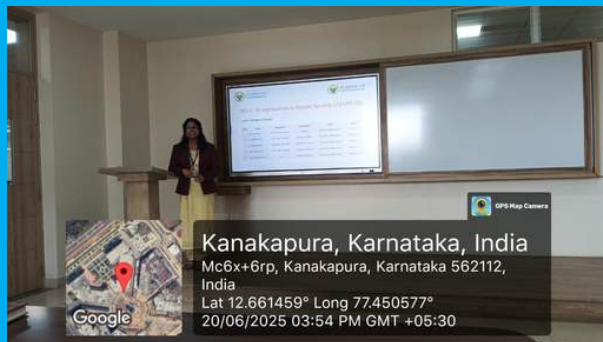
The Special Interest Group (SIG) meetings organized by the Department of Electronics and Communication Engineering, Dayananda Sagar University (DSU), were held on 20th and 21st June 2025, in collaboration with faculty members from Dayananda Sagar College of Engineering (DSCE) and Dayananda Sagar Academy of Technology and Management (DSATM). These meetings aimed to foster collaborative research across the Dayananda Sagar Institutions (DSI) by identifying interdisciplinary themes, sharing resources, and promoting a culture of joint academic and research initiatives. The SIG meeting on Interdisciplinary Electrical Science, held on 20th June 2025, was convened by Dr. Arungalai Vendan S, Professor, ECE, DSU, and included faculty from ECE (DSU) and EEE departments of DSCE and DSATM. Dr. Arun Balodi, Chairman, ECE, DSU, opened the session by emphasizing the importance of collaborative efforts to drive innovation and academic excellence. The meeting featured presentations on ongoing research, lab facilities, funding avenues, and prior collaborative experiences, laying the groundwork for deeper inter-institutional engagement and future SIG-led research projects.





“Special Interest Groups (SIGs) in Cybersecurity” - CSE(CY)

As part of strengthening research and academic engagement in the field of Cybersecurity, the Department of CSE (Cyber security) has successfully conducted a collaborative meeting for the four Special Interest Groups (SIGs) on 20th June 2025 in Room number A-230. The meeting saw enthusiastic participation from faculty members across various domains from DSATM (Dayananda Sagar Academy of Technology and Management) and DSCE (Dayananda Sagar College of Engineering), reflecting the department's commitment towards interdisciplinary research, innovation, and collaboration.



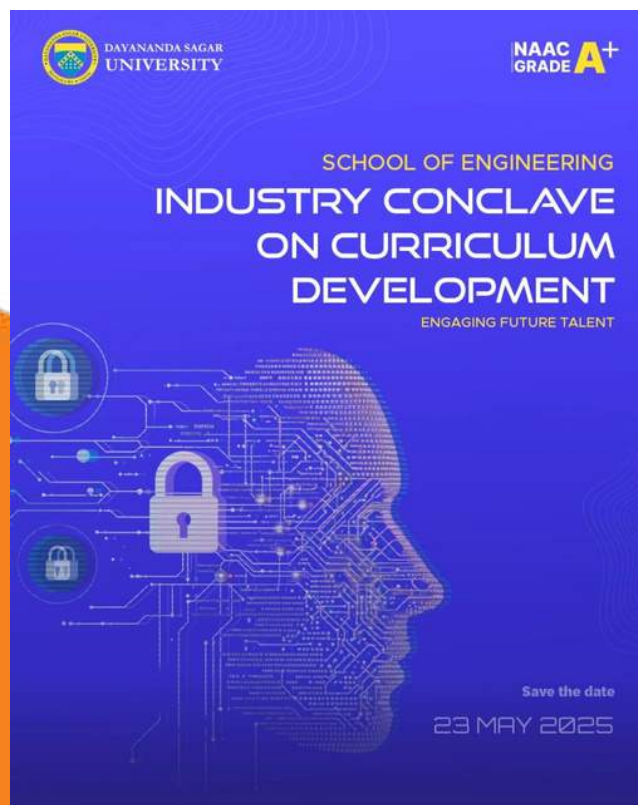
“Special Interest Group (SIG) Meeting on Quantum Computing and Cloud Computing Technologies” - CST

The Department of Computer Science and Technology at Dayananda Sagar University conducted a Special Interest Group (SIG) meeting on Quantum Computing and Cloud Computing on June 20, 2025. This initiative supports the department's goal of fostering research and innovation and establishing a Centre of Excellence in emerging technologies. The session began with a welcome by Dr. Udayakumar Reddy K R, Dean, followed by remarks from the VC, Pro VC, Principal of DSATM, and R&D Head of DSCE. SIG Coordinators Dr. Shahina Parveen M and Dr. Sudha D. emphasized the importance of advanced computing. Faculty from DSU, DSATM, and DSCE participated actively. Highlights included discussions on the fundamentals of Quantum Computing, real-world Cloud applications, interdisciplinary research opportunities, and a roadmap for labs and industry collaboration. Action points involved forming working groups and selecting platforms like IBM Qiskit, AWS Braket, and Azure Quantum. The meeting concluded with an open discussion, with a shared vision to transform the SIG into a Center of Excellence in the near future.



“Industry Conclave 2025 on Curriculum Development” - ECE

The Department of Electronics and Communication Engineering, Dayananda Sagar University, organized the Industry Conclave on Curriculum Development on May 23, 2025, at 9:30 AM in A-Block. This impactful event aimed to bridge the gap between academia and industry by bringing together leading experts to collaboratively design a future-ready ECE curriculum. The conclave featured insightful sessions by eminent speakers, including Mr. Shailesh Sakri, Senior Director at Harman International and IEEE Senior Member, who shared his vast experience of over 24 years in Consumer Electronics, IoT, and Embedded Systems, and Dr. C. P. Ravikumar, Adjunct Professor at IIT Dharwad and Chief Learning Officer at VinyanaTech, known for his contributions to engineering education and training. Led by Dr. Arun Balodi, the event emphasized the importance of aligning academic programs with emerging technologies and industry expectations. The discussions focused on incorporating practical skills, interdisciplinary knowledge, and innovation into the curriculum. Notably, student feedback was also welcomed to ensure the proposed changes are grounded in relevance and real-world applicability, making the academic experience more impactful and career-oriented.





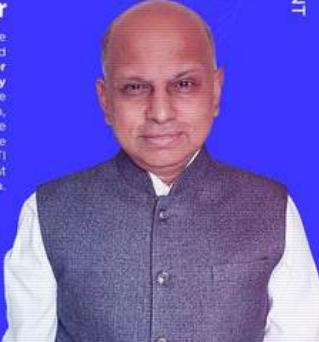
DAYANANDA SAGAR
UNIVERSITY

NAAC
GRADE **A+**

SCHOOL OF ENGINEERING
**INDUSTRY CONCLAVE
ON CURRICULUM
DEVELOPMENT**

ENGAGING FUTURE TALENT

Dr. C P Ravikumar
Dr. C P Ravikumar is a prominent figure in the fields of education and engineering. He is an **Adjunct Professor at the Indian Institute of Technology (IIT) Dharwad**, and also serves as the **Chief Learning Officer at VinyasaTech, Bangalore**. He has a diverse background, including roles as the **Director of Tech. Talent Dev. at TI (India)** and **Vice President (Training) at Control Net India**.



Save the date
Begins May 23
2025



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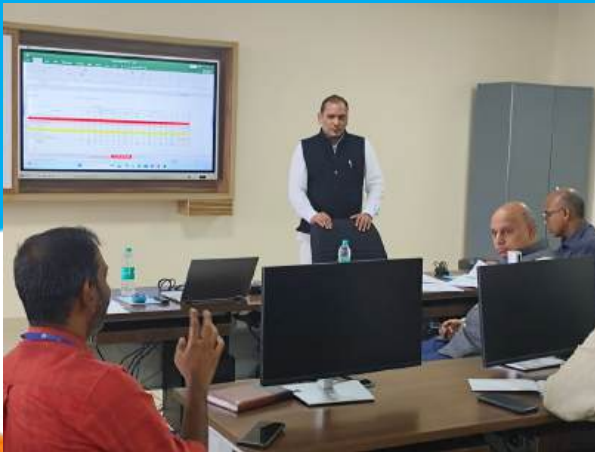
SCHOOL OF ENGINEERING
**INDUSTRY CONCLAVE
ON CURRICULUM
DEVELOPMENT**

ENGAGING FUTURE TALENT

Mr. Shailesh Sakri
A visionary leader with 24 years of experience in Consumer Electronics, IoT, and Automotive Embedded Systems, this IEEE Senior Member and ex-Amazon expert has driven advanced audio technology adoption in top brands and led the development of Amazon's best-selling Echo devices, earning a reputation for strategic leadership and successful global product launches.

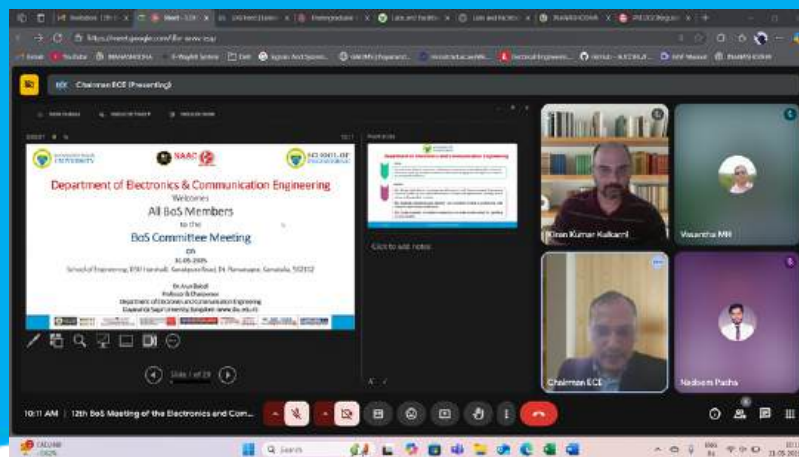


Save the date
Begins May 23
2025



“Board of Studies (BoS) Meeting” - ECE

The Department of Electronics and Communication Engineering, Dayananda Sagar University, convened its BoS meeting to discuss curriculum development, syllabus approvals, and academic strategies for B.Tech, M.Tech, and Ph.D. programs. The meeting concluded with a vote of thanks by Dr. Arun Balodi, who appreciated the valuable contributions of all internal and external members.



“World Environment Day 2025”

World Environment Day 2025, celebrated on June 5th, is a global call to action for environmental protection and sustainability. This year's theme is "Ecosystem Restoration: Our Responsibility, Our Future," emphasizing the urgent need to revive damaged ecosystems and preserve biodiversity for generations to come. Organized by the United Nations, World Environment Day serves as a reminder that everyone has a role to play, governments, businesses, and individuals alike. From planting trees and reducing plastic use to conserving water and supporting clean energy, small actions collectively make a big difference. An NSS activity was carried out with Coordination from the Mechanical Engineering Department and support from the Student Affairs Department to plant tree saplings on June 5th, 2025, inside our campus. Organized by Prof. Abhijith N, Assistant Professor, Department of Mechanical Engineering, NSS Co-ordinator.



“Celebrate Environment Day: Sustainable Product Exhibition”

To commemorate World Environment Day 2025 (5th June), the Department of CSE (Artificial Intelligence and Machine Learning), Dayananda Sagar University, organized a vibrant and informative event on June 5, 2025, under the theme “Celebrate Environment Day – Sustainable Innovations.” The event featured a Sustainable Product Exhibition, where students showcased creative eco-friendly products and models that promote alternatives to single-use plastics. As part of the celebration, Prof. S.V.K.R. Rajeswari delivered an engaging awareness talk on sustainable practices, emphasizing the use of glass, steel, paper, and cardboard over plastic.



“SAPLINGS FOR A SUSTAINABLE FUTURE”

An enlightening session on "SAPLINGS FOR A SUSTAINABLE FUTURE" was conducted by the Department of Computer Science and Engineering ON THE OCCASION OF WORLD ENVIRONMENT DAY on 5th June 2025.

The program began with a warm welcome to all faculty members, staff, and students, followed by an inspiring address by our respected Chairperson, who emphasized the need for collective action to protect our environment. As a symbolic gesture, the Chairperson planted a sapling, setting the tone for the day's activities. All students, faculty members, and staff actively participated in the event, demonstrating great enthusiasm and a strong sense of responsibility toward the environment. The event featured a series of awareness activities, including posters highlighting the importance of clean air, green spaces, and sustainable living. A campus-wide tree-planting drive was carried out, during which students and teachers together planted numerous saplings in designated areas. These efforts not only contribute to increasing the green cover and improving air quality but also promote a deeper understanding of the importance of biodiversity and conservation among students. Such initiatives play a crucial role in instilling environmental values, encouraging eco-friendly habits, and fostering a culture of sustainability within the academic community. The event concluded with a pledge to continue supporting green practices in our daily lives. Students gain awareness of key environmental issues and develop practical skills through hands-on activities like tree planting and clean-up drives.

DAYANANDA SAGAR UNIVERSITY
Devarakagalahalli, Harohalli, Kanakapura Road, Ramanagara Dt. - 562112
School of Engineering
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
&
GREEN WARRIOR COMMUNITY

**ON THE OCCASION OF
WORLD ENVIRONMENT DAY**
"SAPLINGS FOR A SUSTAINABLE FUTURE"

GREEN WARRIORS COMMITTEE

- The main roles of this committee is to organize events to create awareness.
- Participate in maintaining greenery within the campus and outside.
- Segregation of wastes, water conservation, to discourage use of single use plastics and create awareness.
- Visit the adopted villages and create awareness on the greenery and adopt carbon neutral processes in their daily life.

CONVERSERS:
Dr. Udaya Kumar Reddy K R, Dean, SOE
Dr. Girisha G S, Chairperson, CSE
Prof. Nandini K, Green Warriors Committee of SOE, DSU

OBJECTIVES

- Create Environmental Awareness.
- Promote Green Innovation.
- Encourage Sustainability.
- Empower Youth & Communities.
- Support Nature Conservation.

"Environmental Day reminds us that Earth's health is in our hands. From tree planting to reducing waste, every action counts. Join the movement to preserve nature for generations to come"

Date : 5th JUNE 2025
Time : 10AM
Venue : Infront of SOE

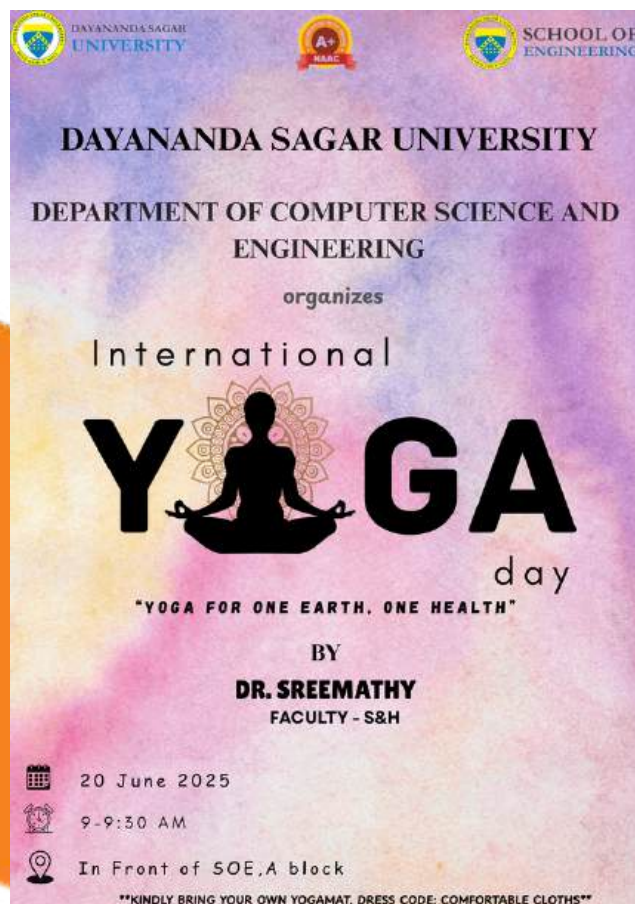
Faculty Co-ordinators:
Dr. Savitha Hiremath, CSE
Prof. Kavyashree I Pattan, CSE
Prof. Arpita Paria, CSE

Student Coordinator:
Pavan Kumar GR 4th sem, CSE



“International Yoga Day” - CSE

The Department of Computer Science and Engineering, SoE, Dayananda Sagar University successfully conducted “International Yoga Day” - Yoga for one Earth, one Health on June 20th to spread awareness about the importance and benefits of yoga in our daily lives. Dr. Sreemathy, Faculty-S&H, took the lead in guiding yoga (Guru) to all faculties of the CSE department. Yoga is an ancient Indian practice that promotes physical, mental, and spiritual well-being. It helps improve flexibility, strength, and concentration while also reducing stress and anxiety. On this special day, the HOD and a few faculty members come together to perform yoga and embrace a healthier lifestyle. Let us celebrate this day by making yoga a part of our routine and working towards a balanced and peaceful life. A heartfelt thank you to everyone who participated in today’s yoga session. Your presence, energy, and commitment made the day truly special. Special thanks to Dr. Girisha sir for encouraging us to do the yoga event, and Dr. Sreemathy ma'am, thank you for guiding us with wisdom, patience, and grace. All the facilities and teams supported and took part in this beautiful journey of mindfulness and well-being. Together, we celebrated balance, peace, and unity through yoga. Let’s carry this spirit forward every day.

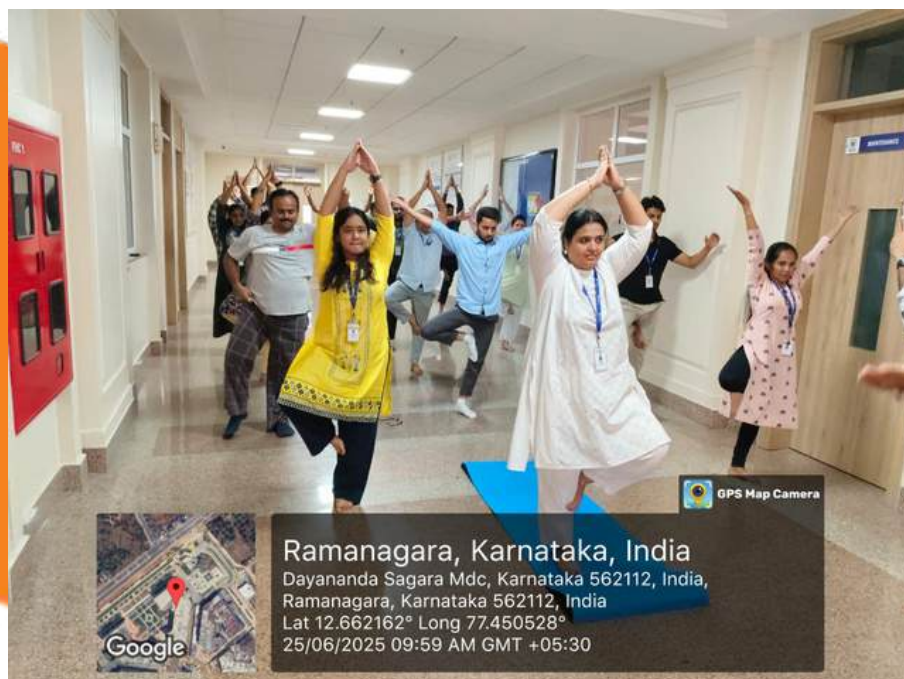




“International Day of Yoga 2025” - CSE(DS)

The Department of CSE (Data Science) has organized the "International Day of Yoga 2025" held on 25th June 2025, from 09:30 AM to 10:30 AM at the School of Engineering, Dayananda Sagar University, Kanakapura Road, Bengaluru. Dr. Shaila S G, Professor and Chairperson (DS), Dr. Santhosh Kumar G, Associate Professor, Dr. U. Pavan Kumar, and Prof. Shivamma D, Assistant Professor, Dr. K.S. Bhagyajyothi, Asst. The director of Physical Education, DSU, & all Faculties of the Department of CSE (Data Science) supported to completion of the program successfully. The event aimed to promote health, harmony, and peace through the practice of yoga and to instill its importance in daily life among staff. The event commenced at 9:30 AM with a welcome address by Dr. Shaila S G, Professor and Chairperson (DS). This was followed by a brief talk on the significance of Yoga Day and its global impact. A certified yoga instructor, Dr. K.S. Bhagyajyothi, Asst. The Director of Physical Education, DSU, conducted a yoga demonstration session as per the Common Yoga Protocol issued by the Ministry of AYUSH. Participants performed various asanas, pranayama, and meditation techniques during the session. The enthusiastic participation of CSE(DS) faculty members reflected their commitment to healthy living. The event fostered a sense of unity and well-being among participants. Many expressed interest in continuing yoga as a regular practice.





“Signature Day”

The Department of Data Science celebrated Signature Day on 5th June 2025 as part of the farewell activities for the outgoing 2021–2025 batch. Students arrived in vibrant attire, writing heartfelt messages and signing on each other's white T-shirts as a symbol of memories and friendship. The event was filled with joy, laughter, photo sessions, and emotional moments as students reflected on their journey. Faculty members joined the celebration and shared encouraging words. It was a day of smiles, gratitude, and lasting bonds, marking the end of an unforgettable chapter in their academic life.



“Farewell Function” - CSE(DS)

School of Engineering, Department of CSE (Data Science) organized a Farewell for the 2021–2025 batch on 6th June 2025. The event took place in Lecture Hall 2, School of Engineering, DSU, attended by faculty, staff, and students. The Chairperson of the department delivered a warm and motivating welcome address. The Dean congratulated the students and extended best wishes for their future. Outgoing students shared memories and expressed gratitude to teachers and peers. Juniors performed cultural programs, adding energy and celebration to the event. A nostalgic video montage of college memories was screened for the batch. Final-year students received mementos as tokens of appreciation. The event strengthened the bond between seniors, juniors, and faculty. The farewell concluded with group photos and heartfelt goodbyes.



“Farewell day celebration for 2021-2025 batch” - CSE(AIML)

The farewell for the outgoing batch of 2021–2025 was organized on 6th June 2025. The event began with a warm welcome extended by the pre-final year students to their seniors. This was followed by a group photo session, capturing cherished moments. The formal proceedings commenced at 9:30 AM with another heartfelt welcome to all attendees. Dr. Jayavrinda Vrindavanam, Chairperson of the Department of CSE (AI & ML), addressed the gathering by congratulating the students, reminiscing about shared memories, and wishing them success in their future endeavors. Dr. Bahubali, Professor, shared insightful thoughts on the milestones and transitions in one’s career journey.









Dr. Santhosh Kumar J
Associate Professor
Department of CST



Prof. Chithambarathanu M
Assistant Professor
Department of CST



Prof. Ramandeep Kaur
Assistant Professor
Department of CST



Dr. Nivetha NRP
Assistant Professor
Department of CST

- Dr. Santosh Kumar J, Prof. M. Chithambarathanu, Prof. Ramandeep Kaur and Dr. Nivetha NRP published a patent on "AR/VR (Augmented Reality/Virtual Reality) that considers the aging of the AR/VR" (Application Number: 202441078399 A).

(12) PATENT APPLICATION PUBLICATION		(21) Application No. 202441078399 A
(19) INDIA		
(22) Date of filing of Application : 16/10/2024		(43) Publication Date : 06/06/2025
(54) Title of the invention : AR/VR (Augmented Reality/Virtual Reality) that considers the aging of the AR/VR		
(51) International classification	:G06N0020000000, G06N0003084000, H02J0007000000, G06F0016230000, G06N0007010000	(71)Name of Applicant : 1)Santosh Kumar Jankatti Address of Applicant :dsu cst 2)Dayananda Sagar University Name of Applicant : NA Address of Applicant : NA
(86) International Application No	:NA	(72)Name of Inventor : 1)Santosh Kumar Jankatti Address of Applicant :dsu cst 2)M.Chithambarathanu Address of Applicant :Deverakaggenhalli Bengaluru
Filing Date	:NA	3)Ramandeep Kaur Address of Applicant :Deverakaggenhalli Bengaluru
(87) International Publication No	: NA	4)Nivetha NRP Address of Applicant :Deverakaggenhalli Bengaluru
(61) Patent of Addition to Application Number	:NA	
Filing Date	:NA	
(62) Divisional to Application Number	:NA	
Filing Date	:NA	
(57) Abstract : The invention relates to a system and method for analyzing and visualizing human aging effects using Augmented Reality (AR) and Virtual Reality (VR) technologies. The system captures real time facial and body features of a user using cameras and sensors, applies machine learning-based aging models, and generates a progressive simulation of aging over time. The visualization can be displayed interactively in AR mirrors or immersive VR environments. The system may provide personalized skincare or wellness recommendations based on the user's current age, predicted aging trajectory, and lifestyle factors. The invention finds application in dermatology, cosmetology, lifestyle coaching, and telemedicine platforms.		
No. of Pages : 1 No. of Claims : 9		



Dr. Santhosh Kumar J
Associate Professor
Department of CST

- Dr. Santosh Kumar J published a patent on "Analysis of Metro Cities Data to address Urban Problems and Solutions for the Economic Development of India" (Application Number: 202441059550 A).

(12) PATENT APPLICATION PUBLICATION		(21) Application No.202441059550 A
(19) INDIA		
(22) Date of filing of Application :07/08/2024		(43) Publication Date : 06/06/2025
(54) Title of the invention : Analysis of Metro Cities Data to Address Urban Problems and Solutions for the Economic Development of India		
(51) International classification :G06Q50/26, G06Q10/04, G06Q10/06 (86) International Application No :NA Filing Date :NA (87) International Publication No :NA (61) Patent of Addition to Application Number :NA Filing Date :NA (62) Divisional to Application Number :NA Filing Date :NA		(71)Name of Applicant : 1)Santosh Kumar Jankatti Address of Applicant :dsu cut 2)Dayananda Sagar University Name of Applicant : NA Address of Applicant : NA (72)Name of Inventor : 1)Dr. Rajesh T M Address of Applicant :Associate Professor Department of Computer Science and Engineering Dayananda Sagar University Bengaluru 562112 Bengaluru 2)Meenakshi Address of Applicant :Assistant Professor Computer Science and Engineering department RNS Institute of Technology Channarayana Bengaluru Karnataka India 560098 Bengaluru 3)Dayananda Sagar University Address of Applicant :Dr. Santosh Kumar J, Associate Professor Department of Computer Science and Technology Dayananda Sagar University Bengaluru 562112 Bengaluru 4)Dr. Raghavendra S Address of Applicant :Associate Professor Computer Science and Engineering department Christ Deemed to be University Kengeri Bengaluru Karnataka India 560074 Bengaluru 5)Santosh Kumar Jankatti Address of Applicant :Dr. Santosh Kumar J, Associate Professor Department of Computer Science and Technology Dayananda Sagar University Bengaluru 562112 Bengaluru
(57) Abstract : This invention relates to a computer-implemented system and method for identifying urban challenges, determining their root causes, and recommending sustainable, decentralized solutions through the use of verified multi-source data. The system collects and aggregates data from government portals, IoT sensors, public databases, and open platforms. It performs automated verification and anomaly detection to ensure data reliability. Using AI-driven analytics, the system identifies key urban problems such as congestion, pollution, and resource misallocation, and correlates these with geographic, economic, and demographic patterns. A solution generation engine proposes optimized interventions, including policy reforms, redistribution of industrial and commercial activity to tier-2 and tier-3 cities, and predictive infrastructure planning. The system further offers an interactive interface for policymakers and urban planners to simulate scenarios, evaluate impact, and deploy localized development strategies. This invention aims to empower data-driven governance and enhance sustainable urban growth through intelligent decentralization.		
No. of Pages : 5 No. of Claims : 8		

- Dr. Santosh Kumar J published a patent on "IoT-Based Smart Power Meter System for Real-Time Monitoring and Efficient Energy Management" (Application Number: 202541055050).



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Department for Promotion of Industry and Internal Trade
Ministry of Commerce & Industry,
Government of India



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GEOGRAPHICAL INDICATIONS

Application Details	
APPLICATION NUMBER	202541055050
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	07/06/2025
APPLICANT NAME	1 . Santosh Kumar Jankatti 2 . Dayananda Sagar University
TITLE OF INVENTION	IoT-Based Smart Power Meter System for Real-Time Monitoring and Efficient Energy Management
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)	13/06/2025

Application Status

- Dr. Santosh Kumar J published a patent on "AI-Powered Multi-Model Deep Learning System for Real-Time Cardiac Arrhythmia Detection Using Enhanced ECG Signal Representation and Temporal Content Modelling" (Application Number: 202541058076).



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Department for Promotion of Industry and Internal Trade
Ministry of Commerce & Industry,
Government of India



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GEOGRAPHICAL INDICATIONS

Application Details	
APPLICATION NUMBER	202541058076
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	17/06/2025
APPLICANT NAME	1 . Santosh Kumar Jankatti 2 . Dr. Renukadevi M N 3 . Dayananda Sagar University
TITLE OF INVENTION	AI-Powered Multi-Modal Deep Learning System for Real-Time Cardiac Arrhythmia Detection Using Enhanced ECG Signal Representation and Temporal Context Modeling
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)	27/06/2025



Dr. Nivetha NRP
Assistant Professor
Department of CST



Prof. Ramandeep Kaur
Assistant Professor
Department of CST

- Dr. Nivetha NRP and Prof. Ramandeep Kaur published a research article titled “Un-Pirate: Camcording Piracy Prevention” at the First International Conference on Artificial Intelligence, Computation, Communication and Network Security (AICCoNS - 2025) held in the University of Wollongong in Dubai, on 5th and 6th June 2025.





Prof. Junaid Mundichipparakkal
Assistant Professor
Department of CST

- Prof. Junaid Mundichipparakkal successfully cleared the Python (Basic) certification test on 29th June 2025, conducted by HackerRank.



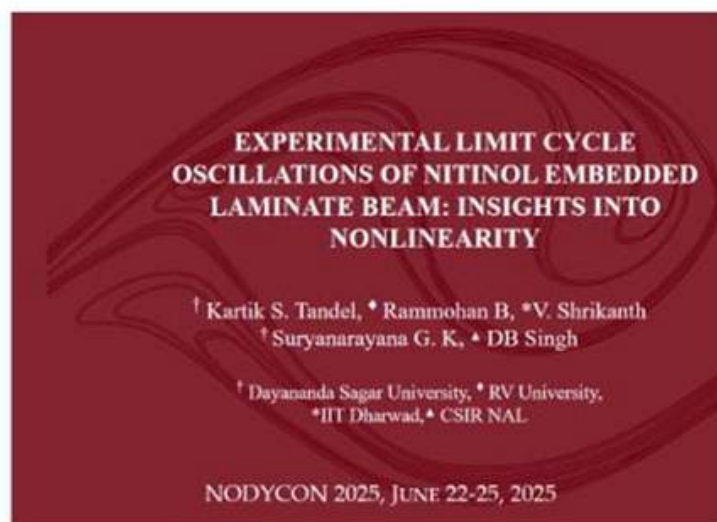


Prof. Kartik S. Tandel
Assistant Professor
Department of AE



Dr. G K Suryanarayana
Professor
Department of AE

- Prof. Kartik S. Tandel (AE-DSU, Bangalore), Prof. Ramamohan Bhanumurthy (RVU, Bangalore), Prof. D. B. Shrikanth (IIT Dharwad), Prof. G. K. Suryanarayana (AE-DSU, Bangalore), and Dr. D. B. Singh (CSIR-NAL) have successfully presented a paper titled “Experimental Limit Cycle Oscillations of Nitinol Embedded Laminate Beam: Insights into Nonlinearity” at the 4th International Nonlinear Dynamics Conference (2025), held at Stevens Institute of Technology, New Jersey, USA, from 22–25 June 2025.





Dr. Suryanarayana GK
Professor
Department of AE

- Dr. G. K. Suryanarayana, Professor in the Department of Aerospace Engineering, reviewed a paper titled “A Database of CFD-based Buffet-Induced Forces for Artemis I Structural Response Evaluation” for the Journal of Spacecraft and Rockets.
- Dr. G. K. Suryanarayana, Professor in the Department of Aerospace Engineering, reviewed papers for Physics of Fluids, an AIP Publishing journal.

Journal of Spacecraft and Rockets <onbehalf@manuscriptcentral.com>

Thu, 19 Jun 2025 at
09:56

Reply to: rcumming@calpoly.edu

To: surya-ae@dsu.edu.in, gksuryanal@gmail.com

19-Jun-2025

Dear Dr. Gargeshwari Suryanarayana:

Thank you for reviewing manuscript # 2025-02-A36387 titled "A Database of CFD-based Buffet-Induced Forces for Artemis I Structural Response Evaluation" for the Journal of Spacecraft and Rockets.

On behalf of the Editors of the Journal of Spacecraft and Rockets, we appreciate the voluntary contribution that each reviewer gives to the Journal. We thank you for your participation in the online review process and hope that we may call upon you again to review future manuscripts.

Sincerely,
Dr. Russell Cummings
Associate Editor, Journal of Spacecraft and Rockets
rcumming@calpoly.edu

Certificate for Reviewer

presented to

Prof G K Suryanarayana

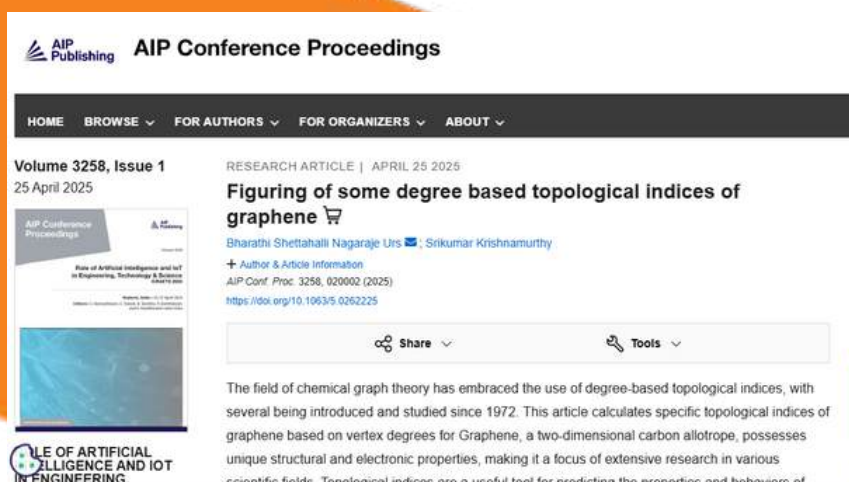
has reviewed for *Physics of
Fluids, an AIP Publishing journal*





Dr. Srikumar
Associate Professor
Department of Mathematics

- Dr. Srikumar published a research article titled “A Computational Approach to Predictive Modelling Using Degree-Based Topological Descriptors: Applications in Structure–Boiling Point Relationships of Oxo Organic Compounds” in the Journal of Dynamics and Control (JODAC), published by Universities and Research Institutions in China. It is a Q3-indexed journal with ISSN: 1672-6553. Date of Publication: June 2025. Impact Factor: 0.221 (SJR). Volume 9, Issue 6, 2025, Pages 66–81.
- Dr. Srikumar published a research article entitled “Figuring of Some Degree-Based Topological Indices of Graphene” in the journal AIP Conference Proceedings, published by AIP Publications.





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

- Dr. Durbadal Chattaraj presented a paper titled “Spurious Social Network Profiles Identification Through Hybrid ML Techniques: Analysis and Observation” at the 11th International Conference on Communication and Signal Processing (ICCSP 2025) held on 5th to 7th June 2025 at Adhiparasakthi Engineering College, Melmaruvathur, Tamil Nadu.





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

- Dr. Dilip Kumar Jang Bahadur Saini has presented a paper titled “Personalized Federated Learning for Privacy- Preserving and Scalable IoT-Driven Smart Healthcare” at the 3rd International Conference on Inventive Computing and Informatics (ICICI 2025) held from 4-6, June 2025 at S.E.A. College of Engineering and Technology Bengaluru, Karnataka, India.
- Dr. Dilip Kumar Jang Bahadur Saini has successfully organized a special session on the topic “Recent Trends and challenges in Artificial Intelligence, Biomedical Science and Healthcare Informatics for Society 5.0 using New Age Technologies” for the First International Conference on Artificial Intelligence, Computation, Communication and Network Security (AICCoNS 2025) held in the University of Wollongong in Dubai, 5-6 June 2025.





Prof.V. Vinitha
Assistant Professor
Department of CSE(CY)

- Prof. Vinitha V, presented her research paper titled "Ensemble Stacking of GNNs, Transformers, and Reinforcement Learning for Scalable Personalized Book Recommendations" at the 1st International Conference on Networked Computing and Data Analytics (ICNCDA-2025) held on May 23–24, 2025, at Poornima Institute of Engineering & Technology, Jaipur, Rajasthan.



- Prof. Vinitha V has successfully presented her research paper titled "Privacy-Preserving and Scalable Secure Aggregation for Federated Learning in Edge Computing" at the 2025 Second International Conference on Cognitive Robotics and Intelligent Systems (ICC ROBINS) held on 25–26 June 2025 at KPR Institute of Engineering and Technology, Coimbatore, India.



- Prof. Vinitha V participated in the Five-Day Online Faculty Development Programme on 'Exploring AI Applications through MATLAB: From Image Processing to Generative AI' Conducted by the Department of Artificial Intelligence and Data Science of Jyothi Engineering college in association with CoreEL Technologies, Bangalore and MathWorks from 19-05-2025 to 23-05-2025.



- Prof. Vinitha.V has successfully participated in 5-Days Faculty Development Program on “Next-Gen Data Science: Deep Learning, NLP and Responsible AI” from 16/06/2025 to 20/06/2025 organized by Department of CSE, CMR Institute of Technology, Bengaluru.





Dr. Mubeen Ahmed Khan
Assistant Professor
Department of CSE(CY)

- Dr. Mubeen Ahmed Khan has presented paper entitled Adaptive Multi Stream Modified CNN-LSTM Based Real-Time Sign Language Translation with 3D Pose Estimation and Temporal Modelling in 2025 International Conference on Computing Technologies (ICOCT) Organized by Jyothy Institute of Technology, Bengaluru.



- Dr. Mubeen Ahmed Khan has published a book chapter titled "Optimisation Strategies for Next-Generation AI, ML, and IoT Applications" published in "Applications of Computational Learning and IoT in Smart Road Transportation System".



- Dr. Mubeen Ahmed Khan has been awarded a Certificate of Appreciation for his contribution as a Reviewer in the 4th International Conference THEEM-2025 held on 25th & 26th April 2025 at Theem College of Engineering, Boisar (E), Dist. Palghar-401501.



- Dr. Mubeen Ahmed Khan successfully presented a research paper titled "Adaptive Multi-Stream Modified CNN-LSTM Based Real-Time Sign Language Translation with 3D Pose Estimation and Temporal Modelling" at the prestigious 2025 International Conference on Computing Technologies (ICOCT) held on June 13–14, 2025, organized by Jyothy Institute of Technology, Bengaluru, and supported by the IEEE Bangalore Section.





Prof. Ranjima P
Assistant Professor
Department of CSE(CY)

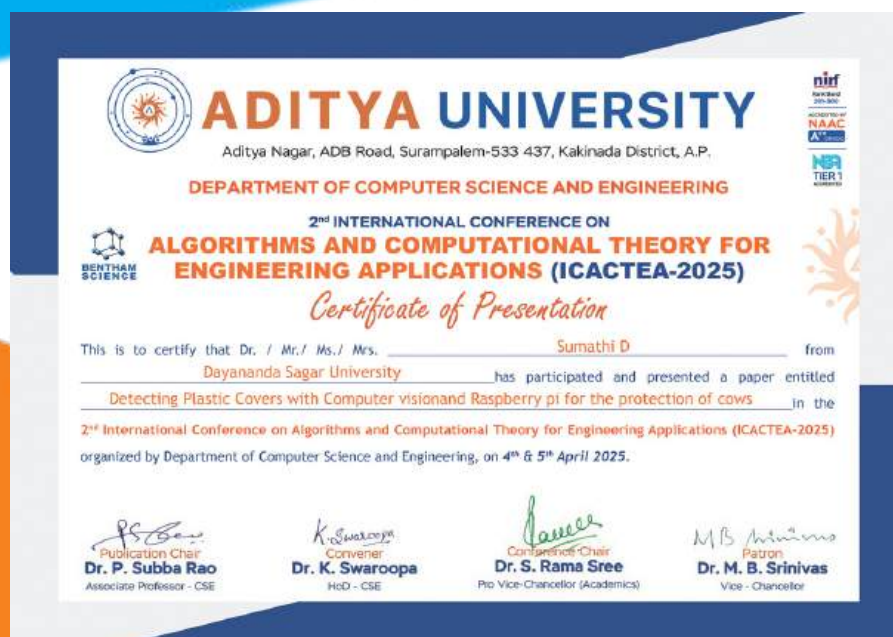
- Prof. Ranjima.P has successfully presented the paper entitled AI-Powered Intrusion Detection and Privacy Preservation in 6G Networks in the IEEE sponsored 2025 International Conference on Cognitive Robotics and Intelligent Systems (ICC - ROBINS) held at KPR Institute of Engineering and Technology, Coimbatore, India during 25-26, June 2025.
- Prof. Ranjima.P has successfully participated in 5-Days Faculty Development Program on “Next-Gen Data Science: Deep Learning, NLP and Responsible AI” from 16/06/2025 to 20/06/2025 organized by Department of CSE, CMR Institute of Technology, Bengaluru.





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

- Dr. D. Sumathi has presented the research work at the 2nd International Conference on Algorithms and Computational Theory for Engineering Applications (ICACTEA-2025), held on 4th & 5th April 2025 organized by the Department of Computer Science and Engineering, Aditya University, Kakinada, A.P. Paper, titled “Detecting Plastic Covers with Computer Vision and Raspberry Pi for the Protection of Cows”, addresses an impactful real-world issue by combining artificial intelligence and embedded systems to enhance animal safety.





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



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

- Dr. Dilip Kumar Jang Bahadur Saini and Dr. D. Sumathi have been awarded a Certificate of Appreciation for their outstanding contribution as a Track Chair at the International Conference on Artificial Intelligence and Sustainable Innovation 2025 (ICAISI-2025).





Prof. Sharanabasappa Tadkal
Assistant Professor
Department of CSE(CY)

- Prof. Sharanabasappa Tadkal has successfully completed all requirements for the CC Domain 4: Network Security certification. Issued on June 3, 2025, this certification demonstrates his expertise and commitment to cybersecurity, specifically in the critical area of Network Security





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

- Prof. Shivamma D., Assistant Professor, Department of CSE (Data Science), attended the Women in Data Science (WiDS) Bangalore @ Intuit event on June 12, 2025, at Intuit's Bangalore office. The sessions focused on emerging trends in Generative AI and Agentic AI, highlighting their industry applications and academic relevance.





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

- Dr. Santhosh Kumar G has actively participated in the One Day Online Faculty Development Programme on “AI TOOLS FOR RESEARCH” organized by the Department of Automobile Engineering & MBA, Eswar College of Engineering (Autonomous) in association with Pencilbitz Publication on 30-05-2025.





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

- Dr. U. Pavan Kumar has actively participated in the One Day Online Faculty Development Programme on “AI TOOLS FOR RESEARCH” organized by the Department of Automobile Engineering & MBA, Eswar College of Engineering (Autonomous) in association with Pencilbitz Publication on 30-05-2025.





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



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

- Dr. Santhosh Kumar G & Dr. U. Pavan Kumar have presented a paper entitled “Multimodal Dialogue Systems Multimodal Transformer Fusion for using Audio and Text Data” for the 3rd International Conference on 6G Communications Networking and Signal Processing (SGCNSP-2024) at Nanyang Technological University, Singapore during 27-28th December 2024.





Dr. Gokulakrishnan S
Assistant Professor
Department of CSE

- Dr. Gokulakrishnan S, Assistant Professor, Department of CSE presented a paper titled “An Optimized Deep Learning based Framework for Cognitive State Classification using Brain-Computer Interface Technologies” in the Springer 9th International Conference on Inventive Communication and Computational Technologies (ICICCT-2025) organized by Sri Ramakrishna College of Engineering, Perambalur, India during 5-6 June 2025.
- Dr. Gokulakrishnan S, Assistant Professor, Department of CSE has completed the FDP on AI Mastery for Educators from 15th May to 7th June 2025 organized by Vishlesan i-HUB IIT Patna.





Dr. Pannangi Naresh
Assistant Professor
Department of CSE

- Dr. Naresh P, Assistant Professor, Department of CSE presented 3 papers titled “ Data Mining for Advanced Anomaly Detection of Speech using One Class SVM (DaMaDS)”, “ Machine Learning-Enabled Virtual Hiring Assistant Powered by Unigram Tokenization and Sentiment Analysis” and “Heart Disease Prediction using Machine Learning” in the IEEE 3rd International Conference on Inventive Computing and Informatics (ICICI 2025) held from 4th to 6th June 2025 at S.E.A. College of Engineering and Technology, Bengaluru, Karnataka.





- Dr. Naresh P, Assistant Professor, Department of CSE presented a paper titled “Self-Supervised Contrastive Denoising with ViT and U-net: A Hybrid Approach”, in the IEEE International Conference on Intelligent Computing and Knowledge Extraction (ICICKE-2025) organized by School of Engineering and Technology, CMR University, Bengaluru, held from 6th to 7th June 2025.





Dr. Sivananda Reddy
Associate Professor
Department of CSE

- Dr. Sivananda Reddy E, Associate Professor, Department of CSE, presented 2 papers titled “Machine Learning-Enabled Virtual Hiring Assistant Powered by Unigram Tokenization and Sentiment Analysis” and “Wine Quality Prediction Using XGBoost with Polynomial Feature Expansion and SMOTE” in the IEEE 3rd International Conference on Inventive Computing and Informatics (ICICI 2025) held from 4th to 6th June 2025 at S.E.A. College of Engineering and Technology, Bengaluru, Karnataka.





Dr. Rajesh T.M
Associate Professor
Department of CSE

- Dr. Rajesh T M, Associate Professor, Department of CSE, published a Scopus indexed conference paper entitled “Secure Data Embedding in Digital Images: Enhancing Covert Communication with LSB-Based Techniques” in Elsevier, ScienceDirect, Procedia Computer Science, 258 (2025) 2091–2100 during June 2025 which was presented in the International Conference on Machine Learning and Data Engineering (ICMLDE 2024).



Available online at www.sciencedirect.com

ScienceDirect

Procedia Computer Science 258 (2025) 2091–2100



Procedia

Computer Science

www.elsevier.com/locate/procedia

International Conference on Machine Learning and Data Engineering

Secure Data Embedding in Digital Images: Enhancing Covert Communication with LSB-Based Techniques

Tina Babu^{a,*}, Rekha R Nair^a, Rajesh T M^b, Kishore S^c

^aDepartment of Computer Science and Engineering, School of Advanced Computing, Alliance University, Bengaluru, India
^bDepartment of Computer Science and Engineering, Dasananda Sagar University, Bengaluru, India
^cDepartment of Computer Applications, Nite (Deemed to be University), Nite Institute of Professional Education, Mangalore, Karnataka, India

Abstract

Information security and the ability to convey secret messages have been necessities since the dawn of civilization. Various media forms, such as photos, audio files, and videos, offer a conducive environment for concealing information that is invisible to the human eye in the current digital era by taking advantage of superfluous or unused data bits. This hidden information can be used for secret communication or as a way to include more messages into a single file, which will minimize the quantity of data that needs to be sent. In order to encode and store messages within the RGB pixels of a cover image (canvas image) without causing visual distortion, two methods are shown in this study. Both approaches split the message into separate segments, which are then translated into 8-bit binary values. These values are then encrypted using a straightforward symmetric exclusive OR (XOR) encryption key, and the message is encoded in the canvas image by changing the pixel value's least significant bit (LSB). The first approach encodes the secret message from top to bottom and left to right by sequentially storing it beginning with the top-left pixel. By encoding the message bits into the cover image pixels at random, the second technique reduces the susceptibility of the concealment to analysis. By using redundant data in digital media, these approaches can hide information while preserving the original visual integrity. This makes them an effective and safe way to communicate covertly or embed data into a single file, which maximizes data transmission.

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Peer-review under responsibility of the scientific committee of the International Conference on Machine Learning and Data Engineering

Keywords: Steganography; Least Significant Bit (LSB); Data Encryption; Covert Communication; Digital Media; XOR Encryption

1. Introduction

In an era where digital communication pervades every aspect of our lives, the need for secure and covert information transmission has never been more critical. Steganography, derived from the Greek words "steganos" (covered) and "graphein" (writing), has emerged as a powerful technique to address this need [14]. Unlike encryption, which makes

^{*} Corresponding author. Tel.: +91-000-000-0000; fax: +91-000-000-0000.
E-mail address: tinababu@gmail.com

1877-0549 © 2025 The Authors. Published by Elsevier B.V.
This is an open access article under the CC BY-NC-ND license (<https://creativecommons.org/licenses/by-nc-nd/4.0/>)
Peer-review under responsibility of the scientific committee of the International Conference on Machine Learning and Data Engineering
10.1016/j.procs.2025.04.439



Dr. Bipin Kumar Rai
Professor
Department of CSE

- Dr. Bipin Kumar Rai, Professor CSE department has successfully organized a special session on the topic “AI-Recent trends on Blockchain, Cloud Computing, Machine Learning for real life problem-solving” for the First International Conference on Artificial Intelligence, Computation, Communication and Network Security (AICCoNS 2025) held in the University of Wollongong in Dubai, 5-6 June 2025.





Dr. Revathi V
Associate Professor
Department of CSE

- Dr Revathi V, Associate Professor, Department of CSE, has participated as a delegate in the 5th Edition of the Healthcare Summit 2025 held on 13th & 14th June 2025 at IISC, Bangalore.





Dr. Poongodi T
Professor
Department of CSE

- Dr. T. Poongodi, Professor, Department of CSE has Organized a special session on the topic "Revolutionizing Deep Learning Paradigms with Edge Intelligence and Internet of Things" for the First International Conference on Artificial Intelligence, Computation, Communication and Network Security (AICCoNS 2025) held in the University of Wollongong in Dubai, 5-6 June 2025.





Prof. Mala B A
Assistant Professor
Department of CSE

- Prof. Mala B A, Assistant Professor, Department of CSE has presented a paper titled “A Decentralized Electronic Health Record System to Enhance Data Security and Accessibility in Healthcare Using Ethereum Blockchain Technology” in the Second International Conference on Emerging Technologies in Science and Engineering, Akshaya Institute of Technology, Tumkur, Karnataka during June 19-20, 2025.





Prof. Bharath M B
Assistant Professor
Department of CSE

- Prof. Bharath M B, Assistant Professor, Department of CSE has presented a paper titled “Cross-Site Scripting Attack Detection: A Comparative Study of Traditional and Deep Learning-Based Solutions” in the Second International Conference on Emerging Technologies in Science and Engineering, Akshaya Institute of Technology, Tumkur, Karnataka during June 19-20, 2025.



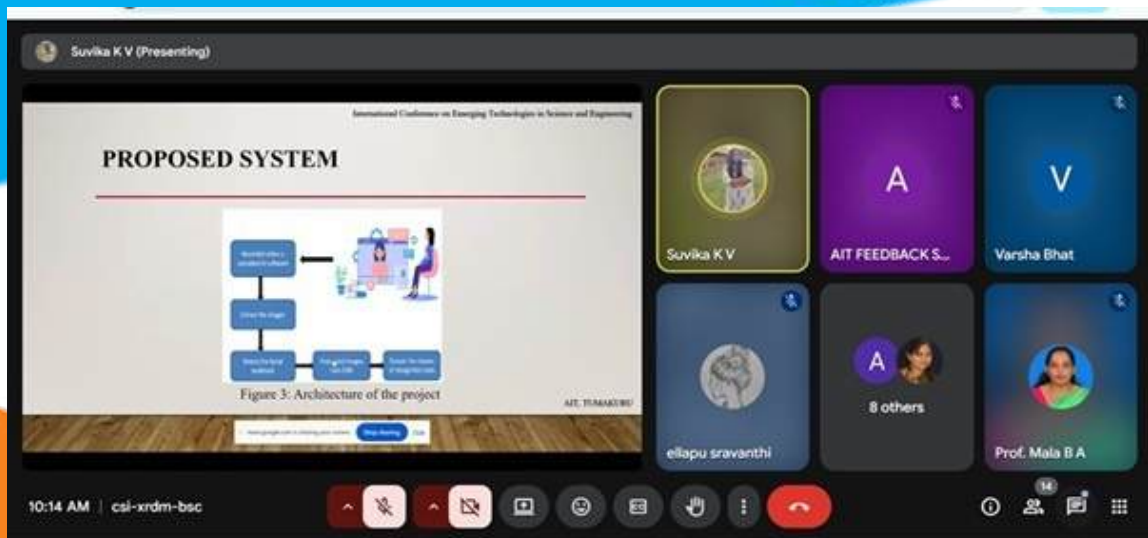


Prof. Mala B A
Assistant Professor
Department of CSE



Prof. Arpita Paria
Assistant Professor
Department of CSE

- Prof. Mala B A, and Prof. Arpita Paria, Assistant Professors, Department of CSE has presented a paper titled “AVI-Based Assessment of Communication Skills and Personality Characteristics” in the Second International Conference on Emerging Technologies in Science and Engineering, Akshaya Institute of Technology, Tumkur, Karnataka during June 19-20, 2025.





Dr. Gokulakrishnan S
Assistant Professor
Department of CSE



Dr. A. Senthil Kumar
Professor
Department of CSE

- Dr. Gokulakrishnan S, Assistant Professor, and Dr. Senthil Kumar A, Professor, Department of CSE has successfully presented the paper entitled “An Efficient Elderly Fall Monitoring and Detection System using Machine Learning and Computer Vision” at 6th International Conference on Inventive Research in Computing Applications (ICIRCA 2025) organised by Department of Electrical and Electronics Engineering, RVS College of Engineering and Technology, Coimbatore, India on 25-27, June 2025.





Prof. Naitik S T
Assistant Professor
Department of CSE

- Prof. Naitik ST, Assistant Professor, Department of CSE has successfully defended his Final Ph.D Viva Voice on the research work titled “Enhancing User Authentication Process by Multimodal Biometric System Using Deep Learning Techniques” under the guidance of Dr. J V Gorabal, Professor, Department of CSE, ATME College of Engineering, Mysore, affiliated to Visvesvaraya Technological University, Belagavi, during 25th June 2025.



- The following faculties from the Department of CSE, DSU successfully participated in the 5-Day Faculty Development Program on “Next-Gen Data Science: Deep Learning, NLP and Responsible AI” from 16/06/2025 to 20/06/2025, organized by the Department of CSE, CMR Institute of Technology. Prof. Annapurna Shobitha S, Prof. Arjun Krishnamurthy, Prof. Arpita Paria, Prof. Bharath B, Dr. Damodharan D, Prof. Diana George, Dr. George Fernandez I, Dr. Revathi V, Dr. T Gayathri, Dr. Sasikala Nagarajan, Dr. Jeeva S, Prof. Mala B A, Prof. Muthu Bala N, Prof. Priyanka S Marellavar, Prof. Shilpa Sudheendran, Prof. Soham Ghosh, Prof. Sowmya H D, Prof. Sushma. D.S., Prof. Tanaya Bala Behera.





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



Dr. Mude Nagarjuna Naik
Assistant Professor
Department of CSE(AIML)



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

- Dr. M Lakshmanan, Dr. Mude Nagarjuna Naik, Prof. R Sriramkumar, Assistant Professors, published the patent titled "Hybrid Quantum-Resistant Multi-Layer Encryption (HQRMLE) System for Health Records using Blockchain Storage and Method Thereof" on 6th June 2025.

Patent Inventors

Dr. M. Lakshmanan

Assistant Professor
Computer Science and Engineering (AI & ML)
School of Engineering
Dayananda Sagar University.

Dr. Mude Nagarjuna Naik

Assistant Professor
Computer Science and Engineering (AI & ML)
School of Engineering
Dayananda Sagar University.

Prof. R. Sriramkumar

Assistant Professor
Computer Science and Engineering (AI & ML)
School of Engineering
Dayananda Sagar University.

(12) PATENT APPLICATION PUBLICATION		(21) Application No.202541049497 A
(19) INDIA		
(22) Date of filing of Application :22/05/2025		(43) Publication Date : 06/06/2025
(54) Title of the invention : Hybrid Quantum-Resistant Multi-Layer Encryption (HQRMLE) System for Health Records using Blockchain Storage and Method thereof		
(51) International classification :H04L0009000000, H04L0009320000, H04L0009400000, H04L0009080000, G16H0010600000		(71)Name of Applicant : 1)Dayananda Sagar University Address of Applicant :Devarakagalahalli, Kanakapura Road, Harohalli, Ramanagara District- 562 112, Karnataka, India NA
(86) International Application No :NA		Name of Applicant : NA
(87) International Publication No :NA		Address of Applicant : NA
(81) Patent of Addition to Application Number :NA		(72)Name of Inventor :
(82) Divisional to Application Number :NA		1)M Lakshmanan
(83) Filing Date :NA		Address of Applicant :PG Boys Hostel, Dayananda Sagar University, Devarakagalahalli, Harohalli Kanakapura Road, Ramanagara District-562112, Karnataka, India. NA
		2)Mude Nagarjuna Naik
		Address of Applicant :Sri Gururaghavendra Swamy Nilaya, Laxman Layout, 1st Cross, Little Hearts School Road, Ramanagara District, Kanakapura-562117, Karnataka, India. Kanakapura
		3)R Sriramkumar
		Address of Applicant :A962, Keerthi Layout, 4th B cross, Chandapura, Anekal Taluk, Bengaluru-560081, Karnataka, India. Bengaluru
(57) Abstract : Hybrid Quantum-Resistant Multi-Layer Encryption (HQRMLE) System for Health 5 Records using Blockchain Storage and Method thereof A Hybrid Quantum-Resistant Multi-Layer Encryption (HQRMLE) system (100) for health records using blockchain storage and method (400) thereof is disclosed. The system (100) includes user device layer (102), edge gateway or router (104), blockchain layer (108), decentralized storage 10 layer (110), and AI processing layer (112). The user device layer that is configured with user devices to run secure authentication module based on Zero-Knowledge Proof (ZKP), enabling cryptographic identity verification without revealing sensitive credentials of users. The edge gateway or router that incorporates hardware-based firewall protection and supports encrypted transmission protocols between device layer and application layer. The blockchain layer maintains 15 tamper-resistant ledger that stores smart contracts, access logs, and metadata associated with encrypted Electronic Health Record (EHR) files. The decentralized storage layer that is configured to store encrypted EHR files. The AI processing layer operates on encrypted datasets of encrypted EHR files utilizing fully homomorphic encryption (FHE) frameworks for preserving data confidentiality. 20 <>		
No. of Pages : 27 No. of Claims : 30		



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

- Dr. Joshuva Arockia Dhanraj, Associate Professor, received the Certificate for serving as a member of the Editorial Board at Deep Science Publishing. The role and responsibilities include promoting and upholding the ethical guidelines set by COPE (Committee on Publication Ethics), which are followed by Deep Science Publishing.





Dr. Jayavrinda Vrindavanam V
Professor & Chairperson
Department of CSE (AIML)



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

- Dr. Vinutha N and Dr. Jayavrinda V., Associate Professor and Professor, published a conference paper titled "NeuroTransformer: Transformer Model for Motor Imagery Classification", at the 5th International Conference on Data Science and Applications (ICDSA), 2024.



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

- Dr. Vinutha N, Associate Professor, published a conference paper titled " Dynamic Slice Selection based 3D Brain Tumour Volumetric Segmentation", at the 5th International Conference on Data Science and Applications (ICDSA), 2024.



Prof. Ankita Thakkar
Assistant Professor
Department of CSE(AIML)

- Prof. Ankitha Takkar, Assistant Professor, received the certificate in recognition of their ability to effectively utilize the knowledge and skills acquired during the Wadhvani Faculty Development Program to facilitate the Wadhvani Foundation's Ignite program and its variants.





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



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

- Dr. Lakshmanan M & Prof. Rakshita R, Assistant Professors, has participated & successfully presented the paper entitled “A Real-Time IoT and Machine Learning-based Smart Insole System for Early Detection and Prevention of Diabetic Foot Ulcers at the 7th International Conference on Inventive Material Science and Applications (ICIMA-2025) held from 28th-30th, May 2025 at Muthayammal engineering college, Rasipuram, Tamil Nadu, India.





Dr. Shreyas Rajendra Hole
Assistant Professor
Department of CSE(AIML)

- Dr. Shreyas Rajendra Hole, Assistant Professor, has presented paper entitled “Adaptive Multi Stream Modified CNN-LSTM Based Real-Time Sign Language Translation with 3D Pose Estimation and Temporal Modelling” in 2025 International Conference on Computing Technologies (ICOCT) Organized by Jyothy Institute of Technology, Bengaluru.



- Dr. Shreyas Rajendra Hole, Assistant Professor, has successfully organized a special session on the topic “Recent Trends and challenges in Artificial Intelligence, Biomedical Science and Healthcare Informatics for Society 5.0 using New Age Technologies” for the First International Conference on Artificial Intelligence, Computation, Communication and Network Security (AICCoNS 2025) held in the University of Wollongong in Dubai, 5-6 June 2025. We sincerely appreciate his support and commitment to the academic and research community.

CERTIFICATE OF APPRECIATION

This is to certify that

Dr. Dilip Kumar Jang Bahadur Saini, Dr. Shreyas Rajendra Hole

has successfully organized a **special session** on the topic "**Recent Trends and challenges in Artificial Intelligence , Biomedical Science and Healthcare Informatics for Society 5.0 using New Age Technologies**" for the First International Conference on Artificial Intelligence, Computation, Communication and Network Security (AICONS 2025) held in the University of Wollongong in Dubai, 5-6 June 2025.
We sincerely appreciate his support and commitment to the academic and research community.

Prof. Dr. M. R. Bhatnagar
Professor, M. R. Bhatnagar
School of Computer Science

Dr. Manoj Kumar
Dr. Manoj Kumar
Editorial Chair, AICONS 2025, UOWD, UAE

- Dr. Shreyas Rajendra Hole, Assistant Professor, has published a conference title "Machine Learning and Artificial Intelligence for Predictive Modeling in Antimicrobial Resistance Data sets, Challenges, and Future Directions." in the 3rd International Conference on Smart Systems for applications in Electrical Sciences (ICSSES), 2025.

Machine Learning and Artificial Intelligence for Predictive Modeling in Antimicrobial Resistance Data sets, Challenges, and Future Directions

Ajeeb Sagar
Computer science Engineering (AI&ML)
Dayananda Sagar University
Bangalore, India
ajeeb.sagar@dsu.edu.in

Vinod Kumar Kolharu
Department of Data Science
Sri Venkateswara Institute of Technology
Hoboken, U.S.A.
vkolharu@svit.edu.in

Ujjwal Jaiswal
Computer science Engineering (AI&ML)
Dayananda Sagar University
City, Country
ujjwaljaiswal202002@gmail.com

Gaurav Kumavat
Computer science Engineering (AI&ML)
Dayananda Sagar University
Bangalore, India
gaurav30.kumavat@gmail.com

Dr. Shreyas Rajendra Hole
Computer science Engineering (AI&ML)
Dayananda Sagar University
Bangalore, India
shreyasrajendra.hole-aime@dsu.edu.in

Ankit Kumar
Computer Science and Engineering
PES UNIVERSITY
Bangalore, India
ankitkumar7070063526@gmail.com

Abstract—The phenomenon of Antimicrobial Resistance (AMR) is emerging strategically rather quickly and efficiently on a global scale. Because of the AMR Corona-virus outbreaks, previously effective antibiotics are becoming obsolete. The situation is only becoming dire as a result of chronic infections, increased deaths and subsequent healthcare expenditures. Increasingly, Artificial Intelligence solutions and Machine Learning strategies are contributing towards optimizing large volume data sets and offer introduction of new intervention methodologies. Within the scope of the current work, we aim to focus on data set amalgamation through Open-Source genomic data along with phenotype and environmental data sets within ML frameworks. While genomic datasets explain portion of resistance around genes, phenotype datasets gather "recorded" datasets of resistance patterns and Environmental datasets monitor the distribution of AMR loops. Opportunities for improving model ethics, integration of data, and addressable generalization gaps to subsequently increase prediction accuracy are studied in focus. Predictability in AMR detection through leveraging AI increases accuracy and optimizes clinical decision-making alongside public health responsiveness. With the help of exact models, it is also possible to predict alterations in the resistance evolution timeline with new resistance genes and while clinically useful to determine right treatment options, they can aid clinical decisions. AI and ML mechanisms enable streamlined AMR surveillance, effectively guiding the direction for inline policy and containment control centers for antibiotic sustainability frameworks. AI, along with ML developments and emergence, is looked upon to take the lead in delays in AMR deployment. ML would intensively work in maintaining the effectiveness of antibiotics and redefining infection healthcare management.

Index Terms—AMR, machine learning, artificial intelligence, predictive modeling, genomic data, phenotype data, public health, deep learning, data integration, explainable AI, resistance prediction.

1. INTRODUCTION

Antimicrobial resistance (AMR) or drug resistance is now among the greatest public health challenges of the 21st century, with resistant strains of pathogens appearing so quickly that treatment using standard methods fails. This increasing danger not only threatens the effectiveness of contemporary medicine but further brings about serious risks to public health and the economy in general. Many patients have since been hospitalized for considerably longer time spans, experienced higher death rates, and caused increased medical expenditures because infections that were once simple to treat with antibiotics have become harder to control. Tackling this challenging and dynamic problem requires new, more creative solutions, rather than a conventional approach. Machine Learning (ML) and Artificial Intelligence (AI) have evolved, and with their improved computational power, they have been employed in the fight against AMR by predicting resistance patterns and understanding the resistance mechanisms thanks to the analysis of large complex databases. These technologies could combine genomic DNA sequences, phenotypic resistance profiles and environmental information databases into predictive models in identifying patterns that may not be visible. Utilizing ML and AI predictive modeling, it is possible to pinpoint genes associated with AMR, track resistance gene growth, and propose treatment interventions that will be useful in helping control AMR. The paper reviews the sources of available datasets in AMR studies, assesses the main problems faced in the application of ML models, and suggests potential ways in which useful applications of AI technologies can be brought in in the fight against antimicrobial resistance. These

3 GOOD HEALTH AND WELL-BEING

PAPER PUBLISHED
Title Of Paper: Machine Learning and Artificial Intelligence for Predictive Modeling in Antimicrobial Resistance Data Sets, Challenges, and Future Directions
Conference: 2025 3rd International Conference on Smart Systems for applications in Electrical Sciences (ICSSES)
Index: SCOPUS
Date of publication: 2025-06-02
DOI: [10.1109/ICSSES64899.2025.11009316](https://doi.org/10.1109/ICSSES64899.2025.11009316)

DAYANANDA SAGAR UNIVERSITY

Gaurav Kumavat
ENG22AM0092

Dr. Shreyas Rajendra Hole

Ajeeb Sagar
ENG22AM0071

Ujjwal Jaiswal
ENG22AM0197

Congratulations

#ResearchAtDSU



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

- Prof. Trupthi Rao, Assistant Professor, has received the certificate has presented her research paper entitled Advanced Risk Prioritization in Supply Chain Management Using Fuzzy AHP and TOPSIS in ICETI4T 2025, organized by SIES Graduate School of Technology, Nerul, Navi Mumbai held on 6th & 7th June 2025.
- Prof. Trupthi Rao, Assistant Professor, has received the certificate recognizing completion of the Microsoft-approved training: Microsoft Learn for Educators, AI-900: Microsoft Azure AI Fundamentals, and AI-102: Designing and Implementing a Microsoft Azure AI Solution (9.5 hours).



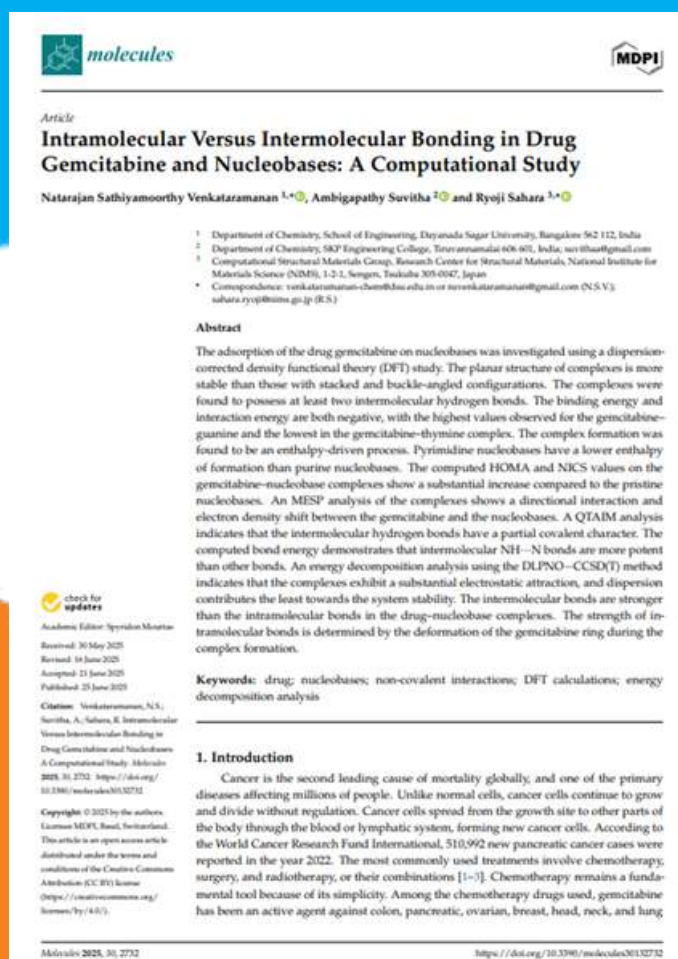
- Prof. Trupthi Rao, Assistant Professor, has presented 3 papers in the "Annual International Conference on Data Science, Machine Learning and Blockchain Technology (AICDMB 2025)" organized by Vidyavardhaka College of Engineering, Mysuru on 27th and 28th June 2025.
- Paper 1: Recommendation of Movies using Fuzzy AHP and TOPSIS
- Paper 2: Weather Predictions using Fuzzy TOPSIS and Fuzzy AHP
- Paper 3: Financial Risk Assessment of an Individual using Fuzzy Logic





Dr. Venkataramanan N.S.
Associate Professor
Department of Chemistry

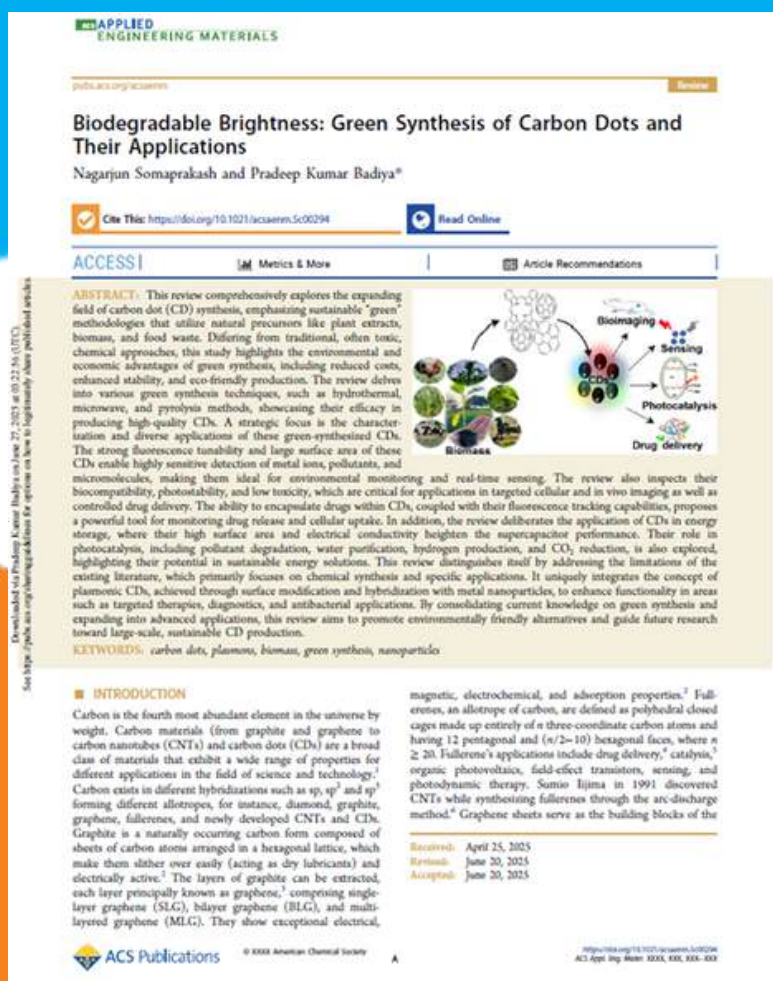
- Dr. Venkataramanan, N.S., Associate Professor, Department of Chemistry, School of Engineering, DSU, has published a research article with title “Intramolecular Versus Intermolecular Bonding in Drug Gemcitabine and Nucleobases: A Computational Study” as Research Article in *Molecules*, (with Quartile Q1 and IF=4.6) Volume 30, Issue 13, Page No. 2732.





Dr. Pradeep Kumar Badiya
Assistant Professor
Department of Chemistry

- Dr. Pradeep Kumar Badiya., Assistant Professor, Department of Chemistry, School of Engineering, DSU, and his Ph.D student Mr. Nagarjun, have published a research article with title “Biodegradable Brightness: Green Synthesis of Carbon Dots and Their Applications” as Review in ACS Applied Engineering Materials, Articles ASAP (Review), (with an IF = 3.5).





Dr. A V Raghu
Professor
Department of Chemistry

- Dr. A.V. Raghu, Department of Chemistry, Dayananda Sagar University, Bangalore. Congratulations on being recognized as one of the Best Scientists in Chemistry 2024! This is a remarkable achievement and a testament to your dedication and impactful contributions to the field.
- Additionally, receiving the Editorial Contribution Award from a prestigious Q1 journal like Discovery Materials (Springer Nature) is a significant honor.

Anjanapura V. Raghu
 Dayananda Sagar University
 India

<https://research.com/u/anjanapura-v-raghu>

D-Index & Metrics		D-index	Citations	Publications	World Ranking	National Ranking
Discipline name		52	8,193	80	11347	205
Chemistry					(121518)	(363)

SPRINGER NATURE
Editorial Contribution Award 2025

This award is presented to

Raghu Anjanapura

Discover Materials

Ritu Dhand
 Chief Scientific Officer,
 Springer Nature

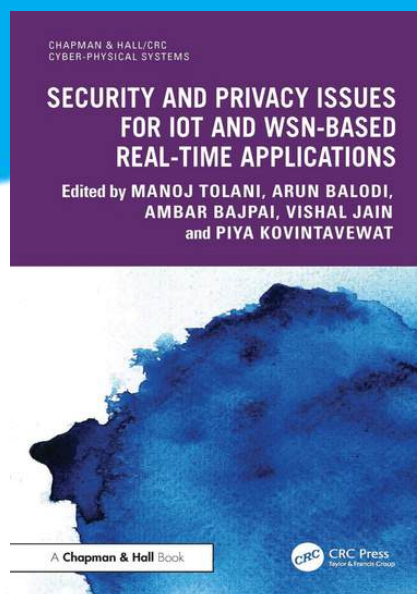
May 2025

Date



Dr. Arun Balodi
Professor & Chairperson
Department of ECE

- Dr. Arun Balodi, Professor and Chairman, has served as one of the editors for the newly published book titled "Security and Privacy Issues for IoT and WSN-Based Real-Time Applications."
- Dr. Arun Balodi, Professor and Chairman, delivered an expert lecture titled "Multi-Channel Non-Stationary Biomedical Signal Processing and Applications" on 17th February 2025.



- Dr. Arun Balodi, Professor and Chairman delivered an expert session on June 24, 2025, titled "Mastering Your Manuscript: An Introduction to LaTeX for Researchers."

"Mastering Your Manuscript: An Introduction to LaTeX for Researchers"

AI-Powered Tools for Enhanced Academic Research Writing
Organized by
Amity School of Engineering & Technology

Dr. Arun Balodi, Professor & Chairman,
Electronics and Communication Engineering

School of Engineering,
Dayananda Sagar University, Bangalore.

Mastering Your Manuscript: An Introduction to LaTeX for Researchers | Dr. Arun Balodi | 24 June 2025 | 1 / 34

- Dr. Arun Balodi, Professor and Chairman has been invited as the Program Committee Chair for the 2025 International Conference on Computer Vision and Image Computing (CVIC 2025).

2025 International Conference on Computer Vision and Image Computing (CVIC 2025)

October 31 - November 2, 2025

2025 International Conference on Computer Vision and Image Computing

Welcome to CVIC 2025

2025 International Conference on Computer Vision and Image Computing

2025 International Conference on Computer Vision and Image Computing (CVIC 2025)

Home Committee Call For Papers Submission Guidelines Registration Publication Program

Committee

Conference Chairs

 Prof. Yang Yue, SPIE Fellow, IEEE Senior Member, Xi'an Jiaotong University, China	 Prof. Tae Kyun Kim, Korea Advanced Institute of Science & Technology, Republic of Korea	 Prof. Lin Chen, IEEE Senior Member, Macao Polytechnic University, China
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Program Committee Chairs

 Prof. Arun Balodi, IEEE Senior Member, IETE Fellow, ISTE Life Member, Dayananda Sagar University, India	 Prof. Yonghong Song, Xi'an Jiaotong University, China
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Dr. Sneha Sharma
Assistant Professor
Department of ECE

- Ms. Sneha Sharma, Assistant Professor presented a research paper titled: “Enhanced Video Super-Resolution Using Residual Recurrent Convolutional Networks” at the International Conference on Recent Advancements in Artificial Intelligence & Soft Computing (ICAISC 2025) held on June 5th & 6th, 2025, at Methodist College of Engineering & Technology, Hyderabad, Telangana.





Prof. Jisy N K
Assistant Professor
Department of ECE



Dr. Vinu R
Associate Professor
Department of ECE

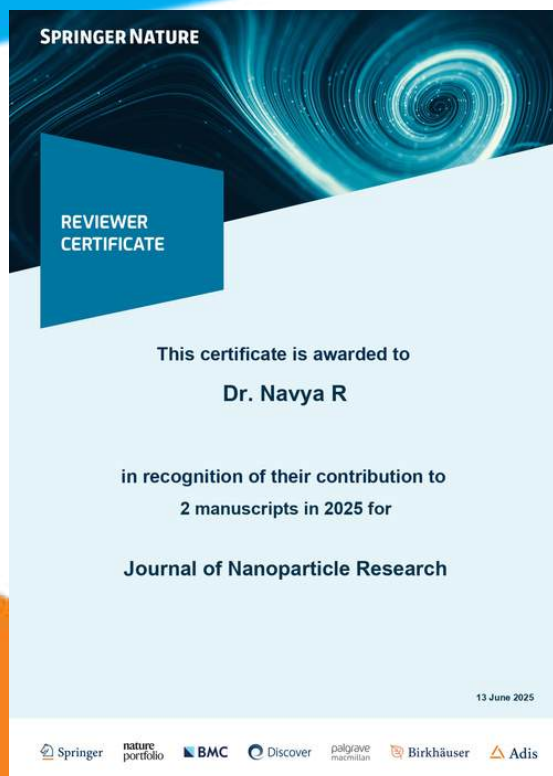
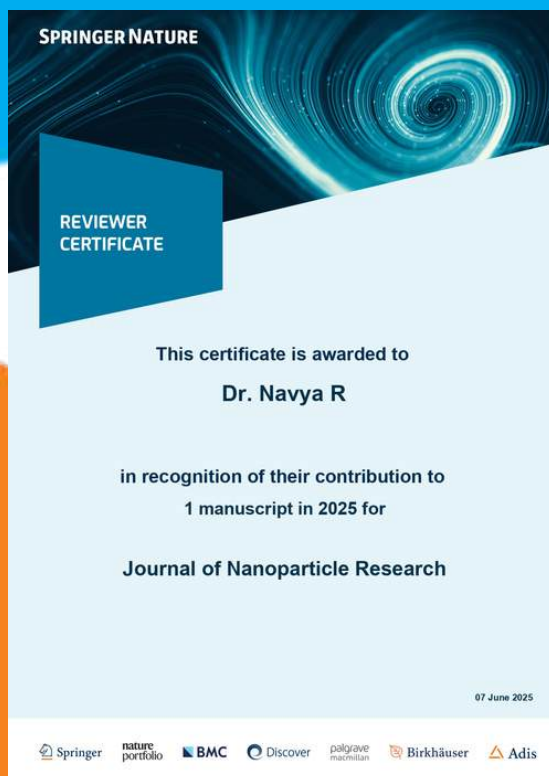
- Prof. Jisy N K., Assistant Professor, and Dr. Vinu R., Associate Professor, published an Indian patent titled “A SMART ECG SYSTEM USING MACHINE LEARNING FOR EARLY DETECTION OF SLEEP APNEA AND CARDIAC ABNORMALITIES” Application No. 202541045461 A

(12) PATENT APPLICATION PUBLICATION		(21) Application No. 202541045461 A
(19) INDIA		
(22) Date of filing of Application : 12/05/2025		(43) Publication Date : 30/05/2025
(54) Title of the invention : A SMART ECG SYSTEM USING MACHINE LEARNING FOR EARLY DETECTION OF SLEEP APNEA AND CARDIAC ABNORMALITIES		
(51) International classification	:A61B0005000000, G16H0050200000, G16H0040670000, G16H0050700000, A61B0005020500	
(86) International Application No	:NA	
Filing Date	:NA	
(87) International Publication No	:NA	
(61) Patent of Addition to Application Number	:NA	
Filing Date	:NA	
(62) Divisional to Application Number	:NA	
Filing Date	:NA	
(71) Name of Applicant :	1) Ramadhas Vinu Address of Applicant : 8-65/67-A Subash Bhavan, Toll Gate Junction, Eraniel Konam, Eraniel, Kanyakumari District, Tamilnadu -629802 ----- 2) Dayananda Sagar University Name of Applicant : NA Address of Applicant : NA (72) Name of Inventor : 1) Meghana A Anthreya Address of Applicant : Meghana A Anthreya 3rd cross road, Raghavendra Nagar, near Nalanda Convent Tumkur - 572102 Tumkur ----- 2) Jisy N K Address of Applicant : Jisy N K Nedumkandathil House South Koduvally Koduvally PO Kozhikode Kerala- 673572 Kozhikode ----- 3) Ramadhas Vinu Address of Applicant : 8/67 SUBASH BHAVAN ERANIEL KONAM ERANIEL KONAM -----	
(57) Abstract :		
This project introduces a smart, wearable health system that tracks your heart through ECG signals and uses an LSTM-based AI model to predict problems before they happen. With a Raspberry Pi at its core, it processes real-time data to detect sleep apnea, WPW syndrome, or heart attack warning signs. The system sends out alerts and lets doctors or family monitor it remotely via the cloud. Whether you're at home, on the move, or in a clinic—this device is built to watch over you and act before it's too late. This invention stems from the growing need for proactive, accessible, and intelligent healthcare monitoring—especially when it comes to cardiovascular conditions that demand constant vigilance. Unlike traditional systems confined to hospitals or clinics, this compact ECG monitoring device brings diagnostic-grade intelligence into the hands of everyday users. It leverages a low-cost Raspberry Pi, a wearable ECG sensor, and an advanced LSTM neural network to detect sleep apnea and other cardiac abnormalities early, long before symptoms become life-threatening. The LSTM model—designed to handle time-series data—can recognize subtle, dangerous patterns in heart rhythms that may otherwise go unnoticed. By continuously monitoring the user's ECG data in real time, this system functions like an invisible safety net, catching red flags as they arise and ensuring timely intervention without invasive procedures or hospital visits. What sets this system apart is its ability to seamlessly blend portability, affordability, and intelligence. For users in remote or underserved areas, this device could be the first step in bridging the gap between early symptom detection and critical care. Beyond hardware and code, it represents a shift in how we perceive health monitoring—no longer reactive, but preventive. Through cloud integration, alerts can be pushed to caregivers, physicians, or family members, enabling a collaborative ecosystem of support. Whether monitoring a chronic condition, supporting elderly care, or serving as a safety net for those with genetic risk factors, this smart ECG system reimagines personal health tracking. It's not just about data—it's about empowerment, peace of mind, and saving lives before time runs out.		
No. of Pages : 10 No. of Claims : 7		



Dr. Navya R
Assistant Professor
Department of ECE

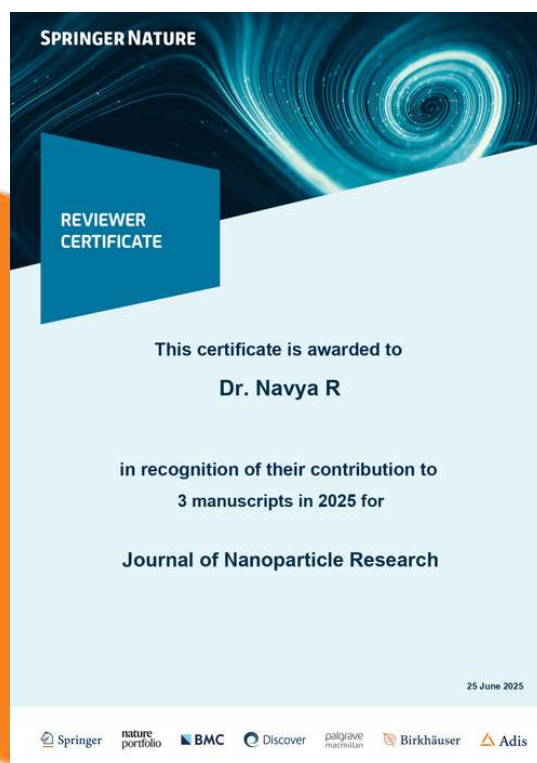
- Dr. Navya R, Assistant Professor, has been recognized by Springer Nature for her valuable contribution as a peer reviewer. She reviewed a manuscript for the prestigious Journal of Nanoparticle Research in the year 2025, showcasing her academic commitment and expertise in the domain of nanotechnology.
- Dr. Navya R, Assistant Professor, has been awarded a Reviewer Certificate by Springer Nature.



- Dr. Navya R, Assistant Professor, published a research paper titled “Ensemble stacking of GNNs, Transformers and Reinforcement Learning for Scalable Personalized Book Recommendations” at the 1st International Conference on Networked Computing and Data Analytics (ICNCDA-2025), held on May 23–24, 2025, at Poornima Institute of Engineering & Technology, Jaipur, Rajasthan.



- Dr. Navya R, Assistant Professor, has been awarded a Reviewer Certificate by Springer Nature for her expert review of three manuscripts in the year 2025 for the reputed Journal of Nanoparticle Research.





Dr. Rupam Bhaduri
Professor
Department of AI & Robotics

- Dr. Rupam Bhaduri has been awarded a Reviewer Certificate by International Transactions on Electrical Energy Systems (Wiley) for his valuable contribution in reviewing a manuscript during 2024. His commitment to academic excellence and peer-review integrity continues to enhance the research community.

WILEY

Reviewer Certificate

This certificate is awarded to

RUPAM BHADURI

for serving as a reviewer for

**International Transactions on Electrical
Energy Systems**

International Transactions on
Electrical Energy Systems

**Forward
Series**

Thank you for reviewing 1 manuscript in 2024

31 March 2025

Editorial Office

FROM: reviewercertificates@wiley.com

TO: dr.rupam@iitb.ac.in

DATE: 31 Mar 2025, 17:57

Standard encryption (TLS).
[See security details](#)

Dear Reviewer,

We would like to thank you for your review contributions to International Transactions on Electrical Energy Systems.

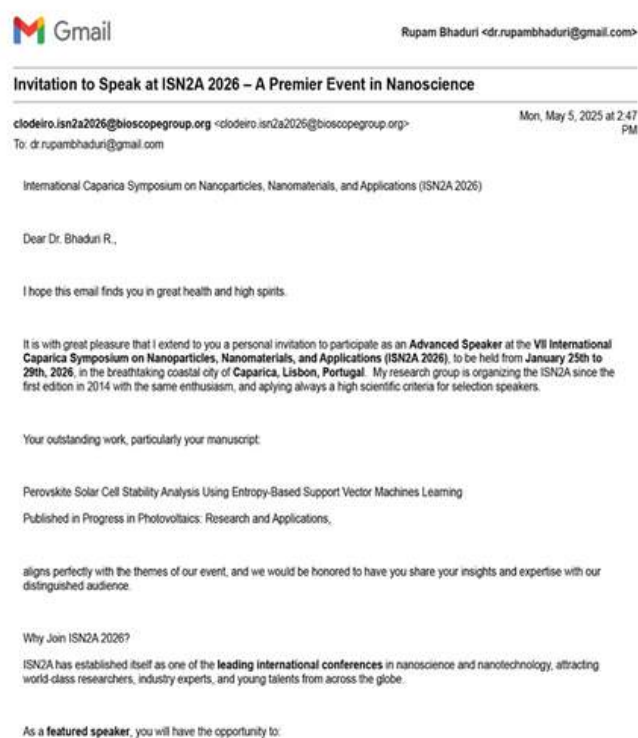
We depend on the efforts and integrity of our reviewers to examine each submitted manuscript and render an opinion as to its suitability for publication. With the attached certificate we would like to express our gratitude for your activity in 2024, which is very much appreciated by the Editorial Board of the journal.

If you have any queries regarding this certificate, please contact reviewercertificates@wiley.com.

The details on your certificate have been taken from the journal's submission and peer review website. If you want to modify your account details, or if you have any other queries related to the journal, please contact the editorial office at etep.office@wiley.com. We hope you will be able to continue your collaboration with us, and we thank you once again.

Kind regards,
Wiley Peer Review Certificate Team

- Dr. Rupam Bhaduri has been invited as a Featured Speaker in a very prestigious European International Symposium on Nanoparticles/ Nanomaterials & Applications 2026, at Caprica, Lisbon, PORTUGAL.



Dr. Bharath Kumar S
Assistant Professor
Department of AI & Robotics

- Dr. Bharath Kumar S., Assistant Professor in the Department of Artificial Intelligence and Robotics, has successfully published a Q2-ranked research paper titled “Augmented Lipid Biosynthesis in Native Fungus through Dual-Stage Optimization of Lignocellulosic Biomass Residue Pretreatment and Fermentation Conditions” in the reputed journal Biomass Conversion and Biorefinery, published by Springer.

Home > Biomass Conversion and Biorefinery > Article

Augmented lipid biosynthesis in native fungus through dual-stage optimization of lignocellulosic biomass residue pretreatment and fermentation conditions

Original Article | Published: 25 April 2025
(2025) [Cite this article](#)

Harshitha Madhusoodan Jathanna, Mohan Poojari, K. S. Ravi, B. N. Venkatesh, Harish Hanumanthappa, N. V. Sarathbabu Goriparti & Bharath Kumar Shanmugam

66 Accesses [Explore all metrics](#) →



Biomass Conversion and Biorefinery




Dr. Bharath Kumar S

- Dr. Bharath Kumar S, from the Department of Artificial Intelligence and Robotics Engineering, School of Engineering, Dayananda Sagar University, has published a research article in Scientific Reports (Nature), a Quartile 1 (Q1) journal, titled: "Separator Equipment Performance of Iron Ore and Coal Using Experimental and ANN-Based Analysis."

 **DAYANANDA SAGAR UNIVERSITY**  **SCHOOL OF ENGINEERING**

**Research Article Publication
in
Scientific Reports (Nature)
Quartile 1 (Q1) Journal**

on

**SEPARATOR EQUIPMENT PERFORMANCE
OF IRON ORE AND COAL USING
EXPERIMENTAL AND ANN-BASED
ANALYSIS**

Published by
Dr. Bharath Kumar S
**Department of Artificial Intelligence and Robotics
Engineering, SOE, DSU**



**Collaboration with RV University, Marwadi University,
King Saud University**
<https://www.nature.com/articles/s41598-025-02681-w>



Dr. Gangadhar T G
Associate Professor
Department of AI & Robotics

- Dr. Gangadhar T G from the Department of Artificial Intelligence and Robotics Engineering, School of Engineering, Dayananda Sagar University, has published a research article titled “Photocatalytic performance of silver-doped titanium dioxide (TiO₂) nanoparticles for environmental applications” in Materials Technology Advanced Performance Materials, a Quartile 1 (Q1) journal.





- On June 5th and 6th, 2025, Mr. Qasim Johar (ENG22AS0039), a third-year Aerospace Engineering student, and Mr. Shashi Kumar C (ENG23DS0034) from the Department of Computer Science (Data Science), Dayananda Sagar University, participated in the Drone Stack Exhibition and Trade Expo hosted by the Drone Federation of India (DFI) at the Bangalore International Exhibition Centre. Both students are part of a team of eight named Sktantra Air Systems, currently working on a project for the National Disaster Management Authority (NDMA), Government of India. The team aims to transform the drone industry by engaging with CEOs and CTOs of leading UAV companies and showcasing innovative disaster management drone solutions.



- Mr. A Sachin (ENG22CS0002), Mr. Pramod Gurunath Chitrapur (ENG22CS0122), Mr. Aryan Penukonda (ENG22CS0024), Mr. M Naveen (ENG22CS0095), 6th Semester CSE Students, Dr. Praveen Kulkarni, Associate Professor, Department of CSE, and in collaboration with Prof. Chandrakala B M, Department of ISE DSCE, presented a research paper titled “NAVISIGHT: A Deep Learning and Voice-Assisted System for Intelligent Indoor Navigation of the Visually Impaired” in the IEEE 3rd International Conference on Inventive Computing and Informatics (ICICI 2025) held from 4th to 6th June 2025 at S.E.A. College of Engineering and Technology, Bengaluru, Karnataka.



- Mr. Shreyas H Reddy (ENG21CS0388), Mr. Shreyas Sridhar (ENG21CS0389), Mr. Shrinikethan S(ENG21CS0392), and Mr. Sanju John (ENG21CS0361), 2025 graduated CSE Students has presented paper entitled “Emergency Traffic Prioritization System with Priority-based Dynamic Route Optimization and IoT-Enabled Dynamic Signal Control” under the guidance of Dr. Sasikala N, Assistant Professor, in the IEEE 5th International Conference on Intelligent Technologies (CONIT 2025) during 20th to 22nd June 2025.



- Ms. D N Padmashri (ENG22CS0283), Ms. Boomika B (ENG22CS0271), Ms. Arushi G Hiregoudar (ENG22CS0531), and Ms. Moni Shree S (ENG22CS0372), 6th semester CSE Students has presented a paper entitled “Comparative Analysis and Evaluation of Deep Learning Models for Efficient Waste Classification” under the guidance of Dr. Damodharan D, Assistant Professor, in the IEEE 5th International Conference on Intelligent Technologies (CONIT 2025) during 20th to 22nd June 2025.



- Ms. B Saishree (ENG22CS02600), Ms. Deepthi S V (ENG22CS0287), Ms. Deethiksha R (ENG22CS0288) and Ms. Harini Sri S (ENG22CS0314), 6th semester CSE Students has presented a paper entitled “FoodMuse: Health-Aware Food Recommendation System Using Machine Learning and API-Based Food Data” under the guidance of Dr. Damodharan D, Assistant Professor, in the IEEE 5th International Conference on Intelligent Technologies (CONIT 2025) during 20th to 22nd June 2025.



- Mr. Anirudh R (ENG22CS0526), Mr. Adwaith T N (ENG22CS0520), Mr. Kedar Minesh Thaker (ENG22CS0555), and Mr. Mritunjay Kumar Singh (ENG22CS0373), 6th semester CSE Students has presented a paper entitled “2D Game Engine Design With GPU Optimization”, under the guidance of Dr. Senthil Kumar A, Professor, at 6th International Conference on Inventive Research in Computing Applications (ICIRCA 2025) organised by Department of Electrical and Electronics Engineering, RVS College of Engineering and Technology, Coimbatore, India on 25-27, June 2025.



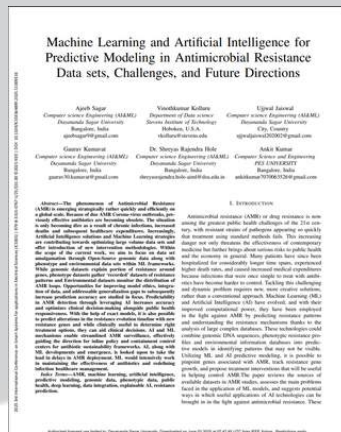
- Ms. Disha K Nanjunda (ENG21CS0120), Ms. Diya Sujil (ENG21CS0125), Mr. Harish Sasikumar (ENG21CS0147) and Mr. Harsh Jolania (ENG21CS0148) 8th semester CSE Students has presented a paper entitled “FrameWeaver - A Virtual Storyboarding and Scene Generation Tool”, under the guidance of Prof. Shilpa Sudheendran, Assistant Professor, in the Hinweis Third International Conference on Advances in Information, Telecommunication and Computing (AITC) during May 31-1-2 June 2025.



- Ms. Naina Kalyanshetti (PH24CSPT14), Research Scholar, Dr. Praveen Kulkarni, Associate Professor, Department of CSE presented a research paper titled “Integrating Multimodal Learning for Scalable Indoor Scene Understanding” in the IEEE 3rd International Conference on Inventive Computing and Informatics (ICICI 2025) held from 4th to 6th June 2025 at S.E.A. College of Engineering and Technology, Bengaluru, Karnataka.



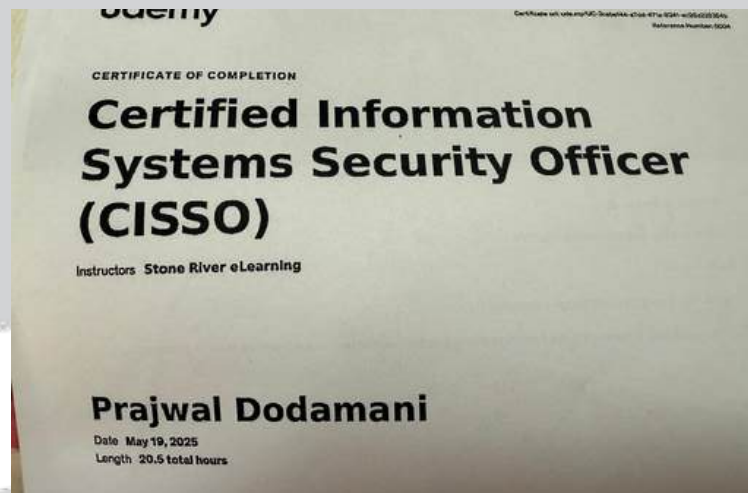
- Mr. Ajeeb Sagar (ENG22AM0071), Mr. Ujjwal Jaiswal (ENG22AM0197), Mr. Gaurav Kumavat (ENG22AM0092), Students of 6th semester, Dept. of CSE (AI&ML) has published a conference title “Machine Learning and Artificial Intelligence for Predictive Modeling in Antimicrobial Resistance Data sets, Challenges, and Future Directions.” in the 3rd International Conference on Smart Systems for applications in Electrical Sciences (ICSSES), 2025.



- Mr. Kolisetty Dhanush (ENG21AM0058), Mr. Kalla Jaya Karthik (ENG21AM0021), Mr. Matam Mahesh (ENG21AM0070), 8th semester students from Dept. of CSE (AI&ML) has participated & successfully presented the paper entitled “A Real-Time IoT and Machine Learning-based Smart Insole System for Early Detection and Prevention of Diabetic Foot Ulcers at the 7th International Conference on Inventive Material Science and Applications (ICIMA-2025) held from 28th-30th, May 2025 at Muthayammal engineering college, Rasipuram, Tamil Nadu, India.



- Mr. Prajwal Dodamani(ENG23CY0033) has completed “Certified Information Systems Security Officer (CISSO)” certification on Udemy, instructed by Stone River eLearning. Spanning over 20.5 hours, this intensive course covered key aspects of cybersecurity leadership, including risk management, access control, network security, and incident response.



- Mr. Lokesh J (ENG22CT0012), Mr. Ahemad Talwar (ENG23CT1001), Mr. Danesh HM (ENG22CT0005), Dr. D Sudha, Dr. Nivetha NRP, Prof. Junaid published a research article titled “Malware Classification Using Deep Learning” at the International Conference on Emerging Technologies in Computing and Communication (ETCC) held on June 26th-27th, 2025, organised by PES University EC Campus, Bangalore.



- Ms. Srushti S (ENG22CT0019), Ms. Pranati Biswal (ENG22CT0016), Ms. Manasvini V (ENG22CT0013), Ms. Sanmathi YA (ENG22CT0018), Ms. Sanchana S (ENG22CT0017), Dr. D Sudha published a research article titled “Candidate Categorization Using K-Means Clustering” at the International Conference on Emerging Technologies in Computing and Communication (ETCC) held on June 26th-27th, 2025, organised by PES University EC Campus, Bangalore.



- Mr. Prajwal Dodamani (ENG23CY0033) has successfully completed the course “Introduction to Networking and Cloud Computing”, offered by Microsoft through Coursera. Certified on May 17, 2025, and is a part of Microsoft’s initiative to provide foundational knowledge in cloud-based technologies and modern networking principles.



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