

FACULTY ACHIEVEMENTS 2025-2026



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

Research Publication

- L. Monish and **S. G. Shaila**, "A Hybrid Fuzzy CNN-LSTM Approach for Emotion Recognition from EEG-ECG Physiological Signals", Eng. Technol. Appl. Sci. Res., vol. 15, no. 6, pp. 30405-30411, Dec. 2025.
- V. Inamdar and **S. G. Shaila**, "An AI-Driven Diagnostic Decision Support System Using EP-Optimized RBF Neural Networks for Breast Cancer Detection", Eng. Technol. Appl. Sci. Res., vol. 15, no. 6, pp. 30340-30348, Dec. 2025.
- Monish, L., **Shaila, S.G.** (2026). Electrocardiogram Signal-Based Analysis and Prediction of Emotions Using Deep Networks. In: Nanda, S.J., Mittal, H., Lim, M.H. (eds) Proceedings of International Conference on Paradigms of Communication, Computing and Data Analytics. PCCDA 2025 2025. Algorithms for Intelligent Systems. Springer, Singapore. https://doi.org/10.1007/978-981-96-6843-4_18
- **S.G. Shaila** & Kumar, U. Pavan & Sg, Sumana. (2025). Speech Audio Analytics based Classification of Human Emotions using Machine Learning and Deep Learning Models. 10.1109/NGISE64126.2025.11085224.
- Shivamma, D and Shaila, S. G, "Deep Learning Based Analysis for Facial Expression Recognition of Simple and Complex Emotions in Healthcare," 2025 IEEE International Conference for Women in Innovation, Technology & Entrepreneurship (ICWITE), Bangalore, India, 2025. pp. 1-6. doi: 10.1109/ICWITE64848.2025.11307127.
- V. Inamdar and S. G. Shaila, "An AI-Driven Diagnostic Decision Support System Using EP-Optimized RBF Neural Networks for Breast Cancer Detection", Eng. Technol. Appl. Sci. Res., vol. 15, no. 6, pp. 30340-30348, Dec. 2025.

Patents

- Dr. Santhosh Kumar G, Dr. U. Pavan Kumar Prof. Godhandaraman T, Prof. Shivamma D & **Dr. Shaila S G** has published a patent title, Dynamic Energy Management System for Self-Powered IoT Devices using Intelligent Energy Harvesting on 26th September 2025 with Application No: 202541083566
- A MOBILE BOT DEVICE FOR NURSING OF PLANT SAPLING
- SYSTEM AND METHOD FOR DATA HIDING IN VIDEO COMMUNICATION USING STEGANOGRAPHY

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



Dr Shaila S G has participated in the Six Days Faculty Development Program on “Biomaterials & Nanomaterials in Biomedical and Clinical Applications” Organized by Department of Medical Electronics Engineering from 14th July to 19th July 2025.

Dr. Shaila S G for extending her support to PyNet Labs Private Limited for organising one day workshop on Networking Fundamentals on 7th October 2025 held at Shri Khushal Das University conducted by Pynet Labs.



Dr. Shaila S G & Prof. Shivamma D has participated & presented the paper titled “Deep Learning based analysis for facial expression recognition of simple & complex emotions in Healthcare” in the 3rd IEEE Conference for Women in Innovation, Technology and Entrepreneurship (ICWITE 2025) on 26-27 Sep 2025 organized by IEEE Women in Engineering Affinity Group Bangalore Section at B.G.S College of Engineering, Bangalore.

Prof. Monish L & Dr. Shaila S G has participated & presented the paper titled "Mpox Risk Forecasting: Integrating Neural Networks and Public Sentiment Analysis" in the 3rd IEEE Conference for Women in Innovation, Technology and Entrepreneurship (ICWITE 2025) on 26-27 Sep 2025 organized by IEEE Women in Engineering Affinity Group Bangalore Section at B.G.S College of Engineering, Bangalore.



Dr. Shaila S G, Prof. Shivamma D & Dr. Santhosh Kumar C for presenting the research paper entitled "Pharmaceutical Quality Assurance via Transformer- Based Deep Learning Models for Automated Tablet Defect Detection" at The IEEE Technical sponsored 2nd International Conference on Artificial Intelligence and Knowledge Discovery in Concurrent Engineering (ICECONF 2025) held at St. Joseph's Institute of Technology, Chennai on 09th & 10th October 2025.

Dr. Shaila S G for extending her support to PyNet Labs Private Limited for organising one day workshop on Networking Fundamentals on 7th October 2025 held at Shri Khushal Das University conducted by Pynet Labs.



Dr. Shaila S G & Prof. Shivamma D has participated & presented the paper titled "Deep Learning based analysis for facial expression recognition of simple & complex emotions in Healthcare" in the 3rd IEEE Conference for Women in Innovation, Technology and Entrepreneurship (ICWITE 2025) on 26-27 Sep 2025 organized by IEEE Women in Engineering Affinity Group Bangalore Section at B.G.S College of Engineering, Bangalore.

The Department of Artificial Intelligence and Data Science at Sapthagiri NPS University organized an insightful Tech Talk titled "Insights of AI & DS." The session featured Dr. Shaila S. G., an accomplished academic with a B.Tech, M.Tech, and Ph.D. from NIT Trichy, currently serving as Professor and Chairperson of the Department of CSE (Data Science) at DSU. She shared valuable perspectives on emerging trends and applications in Artificial Intelligence and Data Science. The talk aimed to deepen students' understanding of the evolving technological landscape. Dr. Praveen Kumar K. V., Director of the Department of Artificial Intelligence and Data Science, coordinated the event. The session was held on 22 November 2025 at 11:00 AM in B-Block 403. Participants gained knowledge on real-world AI systems and data-driven methodologies. The event encouraged learners to explore advanced career paths in AI and DS. The Tech Talk successfully enhanced academic engagement and inspired students to pursue innovative research in the field.



SAPTHAGIRI NPS UNIVERSITY
 chikkasandra, Hesaraghatta Main road, Bengaluru, 560057
 Department of ARTIFICIAL INTELLIGENCE & DATA SCIENCE

Sapthagiri NPS University
TECH TALKS
Insights Of AI&DS

Resource Person
DR. SHAILA S.G
 B.Tech, M.Tech
 Ph.D from NIT TRICHY
 Professor & Chairperson,
 Dept. of CSE (DS), D S U

Dr. Praveen Kumar K V
 Director-Department of Artificial
 Intelligence & Data science
 Sapthagiri NPS University

Faculty Coordinator
Mr. Kalaiiah J B
 Assistant Professor
 AI&DS
Ms. Shashi Rekha G
 Assistant Professor
 AI&DS

Student coordinator
Gagan k urs
 9686856017
Harish
 8217314751

22 NOV 2025
11:00 AM
B-BLOCK 403




Dr. Shaila S G has participated in the Supercomputing India 2025 focused on the convergence of HPC, AI Quantum Computing, Semiconductors and Cybersecurity. It was held from December 9-13, 2025 at the Manipal Institute of Technology. The event brought together academicians, researchers, and industry experts from across the country. Participants gained insights into emerging technologies and national initiatives in advanced computing. The fostered collaboration and knowledge sharing in cutting-edge computational research.

Dr. Shaila S. G, Prof. Shashank Shekhar presented a research paper titled Video Encryption and Decryption with Blockchain-Driven-Access-Control-Mechanism. The conference was organized in association with reputed academic and research organizations and publishers. A Certificate of Appreciation was awarded at the 6th International Conference on Data Engineering and Communication Technology (ICDECT-2025) held on 1st-2nd December 2025 at Bhubaneswar Engineering College, Bhubaneswar.



Research Publications

Journal Articles

1. Inamdar, Vijaylaxmi, **Shaila, S. G.**, Automated Segmentation and Analysis of Histopathological Breast Cancer Images for Enhanced IDC Diagnosis and Assessment Using MobileNetV2+U-Net With Label Propagation, International Journal of Breast Cancer, 2026, 5948413, 23 pages, 2026. <https://doi.org/10.1155/ijbc/5948413>

2. Renukadevi, M.N., Rajesh, T.M., **Shaila, S.G.** et al. Modeling audio dynamics using hierarchical assisted K-means model for structured speaker profiling in TED talks. *Sci Rep* 16, 18656 (2026). <https://doi.org/10.1038/s41598-026-47033-4>
3. S. G. Sumana, T. M. Rajesh, and **S. G. Shaila**, “An Adaptive LSB-Based Video Steganography Framework with Blockchain-Enabled Verification for Secure Multimedia Communication”, *Eng. Technol. Appl. Sci. Res.*, vol. 16, no. 2, pp. 32786–32793, Apr. 2026.

Conference Proceedings

1. Shivamma, D., **Shaila, S. G.**, Monish, L., Chundi, R., & Sumana, S. G. (2026). Deep learning for emotion recognition: CNNs, RNNs, transformers, and self-supervised learning techniques. In *Affective Artificial Intelligence: Fundamentals, Challenges, and Applications*.
2. Monish, L., **Shaila, S. G.**, Chundi, R., Sumana, S. G., & Manjula, M. (2026). Multi-modal emotion detection system: Fusion of facial, voice, and physiological data for improved emotion understanding. In *Affective Artificial Intelligence: Fundamentals, Challenges, and Applications*.
3. Shivamma, D., **Shaila, S. G.**, Monish, L., Chundi, R., & Sumana, S. G. (2026). Affective AI in healthcare and mental health: AI-driven emotion detection for diagnosing depression, anxiety, and autism spectrum disorders. In *Affective Artificial Intelligence: Fundamentals, Challenges, and Applications*.
4. Monish, L., **Shaila, S. G.**, Chundi, R., Sumana, S. G., Shivamma, D., & Manjula, M. (2026). Emotion recognition techniques: Facial expression analysis, speech emotion recognition, physiological signal processing, and multimodal approaches. In *Affective Artificial Intelligence: Fundamentals, Challenges, and Applications*.
5. **Shaila, S. G.**, Monish, L., Sumana, S. G., & Chundi, R. (2026). Natural language processing for sentiment and emotion analysis: AI-driven methods for detecting emotions in text, chatbots, and social media. In *Affective Artificial Intelligence: Fundamentals, Challenges, and Applications*.
6. Monish, L., Rajesh, T. M., **Shaila, S. G.**, Vamshi, V., Sumana, S. G., & Kumar, U. P. (2026). Piezoelectric sensor based apnea disorder prediction using IoT monitoring system. *AIP Conference Proceedings*, 3386(1), Article 020031.
7. **Shaila, S. G.**, Kumar, U. P., Sumana, S. G., Vamshi, V. R., Rajesh, T. M., et al. (2026). MobileNet-based driver drowsiness detection and monitoring system. *AIP Conference Proceedings*, 3386(1), Article 020019.
8. Monish, L., & **Shaila, S. G.** (2026). Electroencephalogram signal processing based emotion analysis and recognition using deep networks. *AIP Conference Proceedings*, 3386(1), Article 020030.
9. **Shaila, S. G.**, Kumar, U. P., Sumana, S. G., Vamshi, V. R., Rajesh, T. M., & Kumar, J. B. S. D. (2026). An IoT-driven emergency medical service vehicle detection system using WaveResNet and YOLOv8 for real-time traffic management. *AIP Conference Proceedings*, 3386(1), Article 020035.
10. Shivamma, D., **Shaila, S. G.**, & Shreedhara, K. S. (2026). Vision Transformer driven sustainable classification of compound facial expressions using morphological features. In *Proceedings of the 2026 International Conference on Innovative Computing, Intelligent Systems and Smart Technologies*.
11. Monish, L., **Shaila, S. G.**, Manjula, M., Nandini, S., Sheetal, P., & Rao, G. S. S. (2026). Sustainable data-driven aquatic ecosystem. In *Data Science and Big Data Analytics: Proceedings of IDBA 2025 (Vol. 1, p. 183)*.

Patents

1. Co-inventor: Edge AI-Driven Embedded Computer Vision and Mechatronic Hardware System for Real-Time Classification and Autonomous Segregation of Solid Waste Using Deep Neural Networks (Application No. 202641041475 A, Published 10-04-2026).

2. Pavan Kumar, U., & **Shaila, S. G.** (2026). System and method for hybrid wearable–vision monitoring of Alzheimer's patients with adaptive mode switching and secure telehealth alerts (Indian Patent No. 202541125359). Published.
3. Godhandaraman, T., **Shaila, S. G.**, & Pavan Kumar, U. (2026). A pattern-driven deep learning framework for time-optimized crop yield prediction (Indian Patent No. 202641012363). Published.
4. Godhandaraman, T., **Shaila, S. G.**, & Pavan Kumar, U. (2026). Autonomous multimodal intelligence system with cross-modal attention and bio-physiological root-zone digital twin for real-time rice yield and grain quality optimization (Indian Patent No. 202641008201). Published.
5. Shivamma, D., **Shaila, S. G.**, Santhosh Kumar, G., Pavan Kumar, U., & Gopi. (2026). Edge AI-driven embedded computer vision and mechatronic hardware system for real-time classification and autonomous segregation of solid waste using deep neural networks (Indian Patent No. 202641041475 A). Published.
6. **Shaila, S. G.** (2026). A method and system for blur-aware enhancement, classification, and adaptive restoration of aerial images (Indian Patent No. 202641000801). Published.
7. **Shaila, S. G.**. Classifier device, system, and method (Indian Patent No. 202341013040). Granted.
8. **Shaila, S. G.**, Santhosh Kumar, Pavan Kumar, U., Godhandaraman, T., & Shivamma, D. (2025). Dynamic energy management system for self-powered IoT devices using intelligent energy harvesting (Indian Patent No. 202541083566). Published.

Workshops Attended

1. One-Day Workshop on Ethics, Transparency, and Accountability in AI-Assisted Research Writing, organized by Vellore Institute of Technology (VIT), Vellore (5th March 2026).

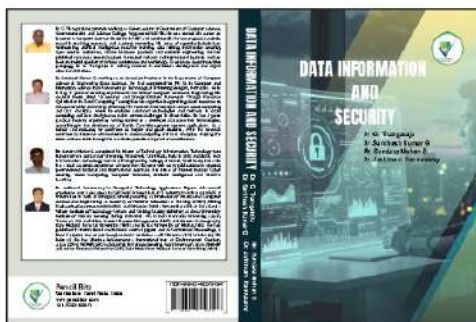
Events Organized & Mentorship

1. Leadership & Guidance: DSU Annual TechFest – CELESTAI 2026 (AI-themed national-level event, 23rd to 25th April 2026).
2. Mentorship: National Innovation Challenge for Drone Application and Research (NIDAR), organized by the Drone Federation of India (January 10–16, 2026) - Team secured top positions.
3. Mentorship: Team 'Roxx Power Bots' securing 1st place in RoboEdge Event during Celestia.
4. Visionary leadership for Department Events including MATLAB AI Workflow Builder workshop, Technical talk on 'Entrepreneurship beyond Tech', Workshop on 'Azure AI', Expert Lecture on AI & ML, Alumni Talk-III, and Placement Orientation.



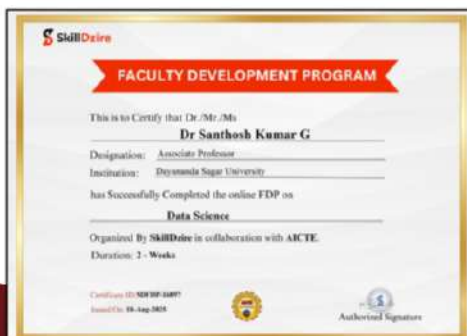
Dr. Santhosh Kumar G
Associate Professor
Department of CSE (Data Science)

Dr. Santhosh Kumar G for organizing & participating in the Five Days Faculty Development Program on "DevOps & MLOps" held from 30th June 2025 to 04th July 2025 organized by Department of CSE(Data Science), School of Engineering, Dayananda Sagar University.



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

Dr. Santhosh Kumar G act as a Resource Person of 2 Day Workshop on Cyber Security at KLE College in association with Learn Online held on 09th & 10th August 2025.



Dr. Santhosh Kumar G has successfully completed the 2-Weeks online FDP on Data Science organized by SkillDzire in collaboration with AICTE on 18th August 2025.

Research Publication

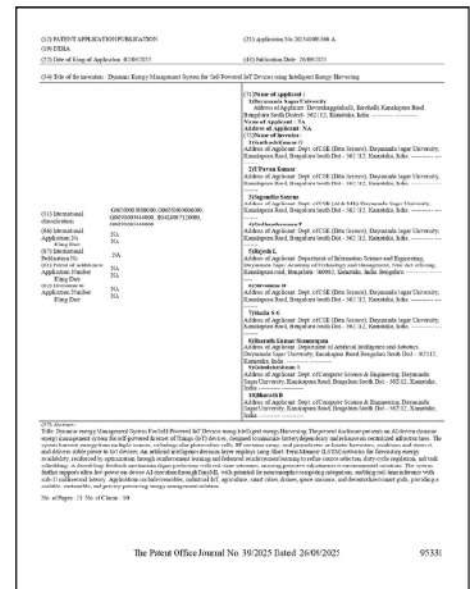
Dr. Santhosh Kumar C & **Dr. U. Pavan Kumar** has successfully presented the paper titled "Trustworthy AI-Powered Multimodal Biofeedback for Stress Management: An Explainable, Privacy-Preserving and Fairness-Aware Framework" at the 7th International Conference on Innovative Data Communication Technologies and Applications (ICIDCA 2025) organised by RVS College of Engineering and Technology, Coimbatore, India on 6th to 08th October 2025.



Dr. Shaila S G, Prof. Shivamma D & **Dr. Santhosh Kumar G** for presenting the research paper entitled "Pharmaceutical Quality Assurance via Transformer- Based Deep Learning Models for Automated Tablet Defect Detection" at The IEEE Technical sponsored 2nd International Conference on Artificial Intelligence and Knowledge Discovery in Concurrent Engineering (ICECONF 2025) held at St. Joseph's Institute of Technology, Chennai on 09th & 10th October 2025.

Patents

Dr. Santhosh Kumar G, Dr. U. Pavan Kumar Prof
Godhandaraman T, Prof. Shivamma D & Dr. Shaila S G has
published a patent title, Dynamic Energy Management
System for Self-Powered IoT Devices using Intelligent
Energy Harvesting on 26th September 2025 with
Application No: 202541083566



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

PROPOSAL DETAILS

Dr. U PAVAN KUMAR
Department of Information Technology
Assistant Professor and Head of Department
Department of Information Technology
Hindusthan Institute of Technology, Coimbatore, India
Email: upavan@hindusthan.ac.in

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

Reference No.: 642025001405

Saved By: Dr. U PAVAN KUMAR

Saved Date: 06-Nov-2025

Project Summary: This project aims to develop a federated learning framework for integrating genomic, epigenomic, and clinical data to discover novel biomarkers and therapeutic targets. The framework will leverage state-of-the-art machine learning techniques to analyze large-scale multi-omic data across multiple institutions, ensuring data privacy and security. The project will involve a multi-phase approach, starting with data collection and preprocessing, followed by model development and validation, and finally, clinical application and deployment. The expected outcomes include the identification of novel biomarkers, the development of predictive models for disease diagnosis and prognosis, and the establishment of a federated learning framework for future research in multi-omic data analysis.

Project Objectives:

- Develop a federated learning framework for integrating genomic, epigenomic, and clinical data.
- Identify novel biomarkers and therapeutic targets using machine learning techniques.
- Develop predictive models for disease diagnosis and prognosis.
- Establish a federated learning framework for future research in multi-omic data analysis.

Project Budget:

Category	Amount (Rs.)
Personnel	10,00,000
Equipment	5,00,000
Materials	2,00,000
Travel	1,00,000
Other	1,00,000
Total	19,00,000



Dr. Santhosh Kumar G has published a Q1 research paper titled "Proof-of-Metrology (PoM): A Blockchain Consensus for Tamper-Proof Calibration in Adversarial Cyber-Physical Systems" in the IEEE Access journal, which has a high Impact Factor of 3.6.
DOI:
[https://ieeexplore.ieee.org/document/11244795]

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



Research Publications

Journal Articles

1. Metan, Jyoti, **Santhosh Kumar, G** et al. "A Semantic-Aware File Metadata Generation Framework for Disk-Level Anomaly Detection in Virtual Machine Backups." Cybernetics and Information Technologies, vol. 26, no. 2, Bulgarian Academy of Sciences, Institute of Information and Communication Technologies, 2026, pp. 196-216. <https://doi.org/10.2478/cait-2026-0021>.
2. Mothkur, R., Venkateswarlu, B., Gokulakrishnan, **Santhosh Kumar, G** et al. AgroQuali-FSL: a few-shot deep learning framework with QualiProtoNet for automated quality grading of fruits and vegetables. Sci Rep 16, 22639 (2026). <https://doi.org/10.1038/s41598-026-52715-0>

3. Viswanath, P. bhathe, & **Santhosh Kumar, G.** (2026). Tomato Leaf Disease Classification Using Mixed Pooling with Nesterov Accelerated Gradient-Based Convolutional Neural Network. *Journal of Artificial Intelligence and Technology*, 6, 410–420. <https://doi.org/10.37965/jait.2026.1034>.
4. Kumar, G.S., Lath, C.A., Pradeep, K.R. **Santhosh Kumar, G** et al. Enhanced Breast Cancer Prediction Using Self-Adaptive Sea Lion Optimization-Based Recurrent Neural Network. *Int J Comput Intell Syst* 19, 96 (2026). <https://doi.org/10.1007/s44196-026-01217-y>
5. Viswanath, PB, **G Santhosh Kumar**. “Residual Densely Connected Progressive Attention Based Transnet for Crop Recommendation Using Soil Conditions”. *International Journal of Drug Delivery Technology*. Volume 16 Issue 24s, 1032-1046. 10.25258/ijddt.16.24s.124.

Conference Proceedings

1. Pavan Kumar, U., **Santhosh Kumar, G.**, & Prapti, B. (2026). Contrast Enhancement in Mammogram Images using CLAHE and CNN-based Approaches. In *Proceedings of the 2026 6th International Conference on Expert Clouds and Applications (ICOECA)*.
2. Pavan Kumar, U., & **Santhosh Kumar, G.** (2026). Fault Detection in Power Line Communication Systems for Smart Grids by Using One Class Support Vector Machine-Based Autoencoder. In *6G Communications Networking and Signal Processing (SGCNSP 2026), Lecture Notes in Electrical Engineering (Vol. 1437)*. Springer. https://doi.org/10.1007/978-981-96-7991-1_27
3. Pavan Kumar, U., & **Santhosh Kumar, G.** (2026). Multimodal Dialogue Systems: Multimodal Transformer Fusion for Using Audio and Text Data. In *6G Communications Networking and Signal Processing (SGCNSP 2026), Lecture Notes in Electrical Engineering (Vol. 1437)*. Springer. https://doi.org/10.1007/978-981-96-7991-1_35
4. Pavan Kumar, U., & **Santhosh Kumar, G.** (2026). Signal Processing Approaches for Secure Channel Estimation and Data Transmission in 5G/6G. In *6G Communications Networking and Signal Processing (SGCNSP 2026), Lecture Notes in Electrical Engineering (Vol. 1437)*. Springer. https://doi.org/10.1007/978-981-96-7991-1_16
5. **Santhosh Kumar, G.**, & Pavan Kumar, U. (2026). Improved Wild Horse Optimization-Based Deep Neural Network for Speaker Identification and Verification. In *6G Communications Networking and Signal Processing (SGCNSP 2026), Lecture Notes in Electrical Engineering (Vol. 1437)*. Springer. https://doi.org/10.1007/978-981-96-7991-1_29
6. **Santhosh Kumar, G.**, & Pavan Kumar, U. (2026). Speech Emotion Recognition Using Acoustic Feature Extraction with Relief and Hidden Markov Model. In *6G Communications Networking and Signal Processing (SGCNSP 2026), Lecture Notes in Electrical Engineering (Vol. 1437)*. Springer. https://doi.org/10.1007/978-981-96-7991-1_31
7. Shivamma, D., Shaila, S. G., & **Santhosh Kumar, G.** (2025). Pharmaceutical Quality Assurance via Transformer-Based Deep Learning Models for Automated Tablet Defect Detection. In *Proceedings of the 2025 2nd International Conference on Artificial Intelligence and Knowledge Discovery in Concurrent Engineering (ICECONF)* (pp. 1-6). IEEE. <https://doi.org/10.1109/ICECONF65644.2025.11379551>
8. G. H. Kumar, D. K. J. Saini, V. Kalpana, P. S. N, **Santhosh Kumar, G.** and Y. D. Kumar, "Secure Edge AI: A Federated Learning Approach to Cache Side-Channel Attack Detection in Vehicular Networks," 2025 IEEE 17th International Conference on Computational Intelligence and Communication Networks (CICN), Goa, India, 2025, pp. 1046-1052, doi: 10.1109/CICN67655.2025.11368045.

Patents

1. Co-inventor: Edge AI-Driven Embedded Computer Vision and Mechatronic Hardware System for Real-Time Classification and Autonomous Segregation of Solid Waste Using Deep Neural Networks (Application No. 202641041475 A, Published 10-04-2026).

FDPs Attended

1. Faculty Development Program on Data Science (ML & AI) conducted by the EICTA Consortium (23rd February 2026 to 8th March 2026).
2. Faculty Development Program on 'Advanced Pedagogy for Effective Teaching, Learning & Assessment', conducted by the EICTA Consortium (9th March 2026 to 21st March 2026).

Events Organized

1. Co-coordinator: Workshop on 'Azure AI' (19th February 2026).
2. Co-coordinator: Three-Day Hands-on Workshop on Internet of Things (IoT) (2nd to 4th February 2026).



Dr. Suresh Arumugam
Associate Professor
Department of CSE (Data Science)

Research Publication

- Sindhu and Suresh Arumugam, "Agent-Based Generative AI Model for Cost-Aware Automation in Machine Learning Pipelines," in IEEE Access, vol. 13, pp. 192189-192209, 2025, doi: 10.1109/ACCESS.2025.3635613.
- Suresh Arumugam, Sindhu A and S. M. N, "Web based Real Time Detection of Compound Facial Emotions with Deep Learning," 2025 7th International Conference on Innovative Data Communication Technologies and Application (ICIDCA), Coimbatore, India, 2025, pp. 242-247, doi: 10.1109/ICIDCA66325.2025.11280329
- V. N. Reddy K, J. Jomy, S. Rose, K. Vasan, Sindhu A and Suresh Arumugam, "Semantic Information Retrieval using Transformer-based Embeddings and Vector Similarity Search," 2025 7th International Conference on Innovative Data Communication Technologies and Application (ICIDCA), Coimbatore, India, 2025, pp. 1031-1037, doi: 10.1109/ICIDCA66325.2025.11280585.
- Kanagaraj, Suresh Arumugam and Sindhu A "Cloud-Based Deep Learning for Pneumonia Detection: A Comprehensive Overview," 2025 3rd International Conference on Advancements in Electrical, Electronics, Communication, Computing and Automation (ICAECA), Coimbatore, India, 2025, pp. 1-7, doi: 10.1109/ICAECA63854.2025.11012567.
- Sindhu A, Suresh Arumugam, et al, "Visual Simultaneous Localisation and Mapping (VSLAM) for Unstructured Environment," 2025 3rd International Conference on Advancements in Electrical, Electronics, Communication, Computing and Automation (ICAECA), Coimbatore, India, 2025, pp. 1-4, doi: 10.1109/ICAECA63854.2025.11012543.
- Sindhu A, Suresh Arumugam, Shaila S G et al, "Personalized Skincare Recommender System Using Deep Learning," 2025 3rd International Conference on Advancements in Electrical, Electronics, Communication, Computing and Automation (ICAECA), Coimbatore, India, 2025, pp. 1-6, doi: 10.1109/ICAECA63854.2025.11012227.
- A. Tomar, V. Kumar, S. Zaid, S. Waseem, Sindhu A and Suresh Arumugam, "Emotional Support System for Mental Health and Personalized Recommendation," 2025 Third International Conference on Networks, Multimedia and Information Technology (NMITCON), BENGALURU, India, 2025, pp. 1-7, doi: 10.1109/NMITCON65824.2025.11188312.

Journal Articles

1. **Arumugam, S.** (2026). Adaptive Deep Reinforcement Learning for Effective Spectrum Sensing in Cognitive Radio Networks. Wireless Personal Communications.

Conference Proceedings

1. **Arumugam, S.** (2026). A CNN-LSTM-Based Framework for EEG Mental Workload Classification with Explainability. In Proceedings of the 4th International Conference on Integrated Circuits and Communication Systems (ICICACS 2026).
2. **Arumugam, S.** (2026). A Hybrid Quantum-Post-Quantum Framework for Secure Data Encryption Using Adaptive Steganography. In Proceedings of the 2026 3rd International Conference on Integrated Intelligence and Communication Systems (ICIICS 2026). IEEE.

3. **Arumugam, S.** (2026). AMF-IoT-Health: An Adaptive Multi-Modal Fusion Framework for Real-Time Smart Health Monitoring Using IoT Sensors. In Proceedings of the 2026 3rd International Conference on Integrated Intelligence and Communication Systems (ICIICS 2026). IEEE.
4. **Arumugam, S.** (2026). An Explainable Framework for Anomaly Detection in Database Query Logs Using Isolation Forest and SHAP. In Proceedings of the Third International IEEE Conference on Trends in Quantum Computing and Emerging Business Technologies (TQCEBT'26). IEEE.
5. **Arumugam, S.** (2026). Multimodal AI Integration: Text, Speech, and Image for Human Interface. In Proceedings of the 2026 2nd International Conference on Cognitive Computing in Engineering, Communications, Sciences and Biomedical Health Informatics (IC3ECSBHI). IEEE.
6. **Arumugam, S.** (2026). Smart City Traffic Optimization Using Adaptive Spatio-Temporal Graph Attention with Predictive Consistency Learning. In Proceedings of the 2026 3rd International Conference on Integrated Intelligence and Communication Systems (ICIICS 2026). IEEE.
7. **Arumugam, S.** (2026). Smart Energy Optimization System Using AI Agents to Monitor, Analyze and Optimize Energy Utilization. In Proceedings of the 2026 International Conference on Machine Learning and Autonomous Systems (ICMLAS). IEEE.
8. **Arumugam, S.** (2026). Tasmanian Devil Integrated Greylag Goose Optimization for Secure and Energy Efficient Clustering and Routing in Wireless Sensor Network. In Proceedings of the 2026 3rd International Conference on Integrated Intelligence and Communication Systems (ICIICS 2026). IEEE.
9. **Arumugam, S., & Sindhu, A.** (2026). Efficient Secure Aggregation in Federated Learning for Edge Computing. In Proceedings of the 6th International Conference on Image Processing and Capsule Networks (ICIPCN 2026).
10. **Arumugam, S., & Sindhu, A.** (2026). Exploratory Analysis and Temporal Dynamics of Air Pollution in Bengaluru. In Proceedings of the 6th International Conference on Communication, Computing & Industry 6.0. IEEE.
11. Chandel, M., Bhattacharjee, P., Malakar, K., **Arumugam, S., Sindhu A., & Esakkiammal A** (2026). An Integrated Dual-Headed CNN-LLM Framework for Simultaneous Alzheimer's Stage and Brain Tumor Classification from MRI Scans. In Proceedings of the 2026 International Conference on Computing Theory and Wireless Communications (ICCTWC). IEEE.

Patents

1. Agent-Based Generative AI Model for Cost-Aware Automation in Machine Learning Pipelines (Published Indian Patent, June 2026).
2. AgileOps Agentic Framework (AAF): A Multi-Agent and LLM-Driven Governance System for Operational Visibility in Agile-DevOps Ecosystems (Published Indian Patent, June 2026).

Certifications & FDPs Attended

1. NVIDIA-Certified Associate: Generative AI LLMs.
2. 6-Day National Level Faculty Development Programme (FDP) on 'Generative & Agentic AI – Tools & Demos', organized by Sardar Vallabhbhai National Institute of Technology (SVNIT), Surat (16th to 21st February 2026).

Awards & Guest Lectures

1. Best Paper Presenter Award at the 4th International Conference on Integrated Circuits and Communication Systems (ICICACS 2026) for presenting the research paper titled 'A CNN-LSTM-Based Framework for EEG Mental Workload Classification with Explainability'.
2. Delivered an expert session on 'Visual AI Workflow Builder using No-Code Technique (LLM + RAG)' during the FDP on Data Science and Machine Learning organized by Kongunadu College of Engineering and Technology, Tamil Nadu (Received Letter of Appreciation)

Events Organized & Other Roles

1. AI Skills for High-Package Tech Careers: Guidance from Industry Experts.

Patents

- Dr. Suresh Arumugam, Sindhu A has Published a patent Title "A SYSTEM AND METHOD FOR CONTEXT-AWARE SENTIMENT ANALYSIS USING HIERARCHICAL LONG SHORT-TERM MEMORY (LSTM) NETWORKS" on date 5th Sep 2025 with Application no:202541074679.
- Dr. Suresh Arumugam, Sindhu A has Published a patent Title "AUTOMATED MACHINE LEARNING SYSTEM FOR GENERATING PREDICTIVE MODELS TAILORED TO INDUSTRY-SPECIFIC OPTIMIZATION" on date 5th Sep 2025 with Application no: 202541080192.
- Dr. Suresh Arumugam, Sindhu A has Published a patent Title "A SYSTEM AND METHOD FOR AUTOMATED FEATURE SELECTION AND DYNAMIC WEIGHT ADJUSTMENT USING REINFORCEMENT LEARNING" on date 28th Nov 2025 with Application no: 202541111102.
- Dr. Suresh Arumugam, Sindhu A has Published a patent Title "SELF-HEALING MACHINE LEARNING ARCHITECTURE FOR FAULT-TOLERANT EDGE COMPUTING DEVICES" on date 28th Nov 2025 with Application no: 202541111100.



Dr. Suresh Arumugam as Reviewer for the 11th International conference on Electronics, Computing and Communication Technologies, IEEE CONNECT (July 10-13, 2025) organized by IEEE Bangalore Section at Sterling's Mac Hotel, Bangalore.

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



Dr Suresh A certified as an Oracle Cloud Infrastructure Data Science Professional upon successfully completing the global certification course offered by Oracle.



Dr. Suresh A & Prof. Sindhu A has successfully presented the paper titled "Web-based Real-Time Detection of Compound Facial Emotions with Deep Learning" at the 7th International Conference on Innovative Data Communication Technologies and Applications (ICIDCA 2025) organised by RVS College of Engineering and Technology, Coimbatore, India on 6th to 08th October 2025.

Dr. Suresh A. received a voucher receipt notification from CMC - Computers, Materials & Continua in recognition of his contribution to the peer-review process. A \$50 coupon was awarded as appreciation for his valuable support to the journal's reviewing activities. The voucher is issued by Tech Science Press and is valid until 24 November 2025.

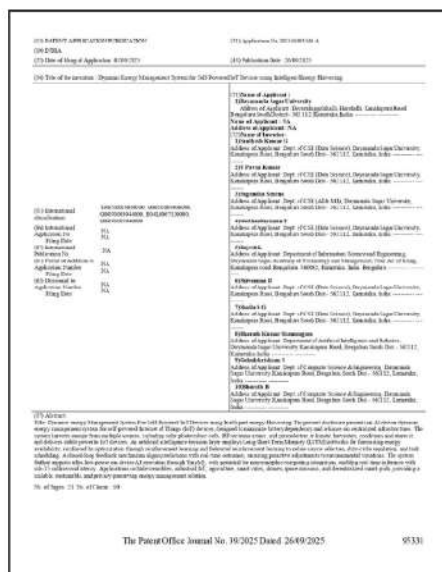




Dr. U. Pavan Kumar
Assistant Professor
Department of CSE (Data Science)

Research Publication

- Kumar, G. Hemanth, Sivananda Reddy, Sugandha Saxena, K. Ayyappa Swamy, and **U. Pavan Kumar**. "FL-DPCSA: Federated learning with differential privacy for cache side-channel attack detection in edge-based smart grids." e-Prime-Advances in Electrical Engineering, Electronics and Energy (2025): 101057.
- S.C. Shaila & **Kumar, U. Pavan** & Sg. Sumana. (2025). Speech Audio Analytics based Classification of Human Emotions using Machine Learning and Deep Learning Models. 10.1109/NCISE64126.2025.11085224.
- G. H. Kumar, D. R. K. Raja, **U. P. Kumar**, C. R. Murthy, K. N. Vidyasagar and V. Eswari, "Privacy-Preserving Federated Learning for Equipment Failure Detection in Smart Manufacturing," 2025 7th International Conference on Intelligent Sustainable Systems (ICISS), India, 2025, pp. 755-761, doi: 10.1109/ICISS63372.2025.11076327.



Dr. Santhosh Kumar G, Dr. U. Pavan Kumar, Prof. Godhandaraman T, Prof. Shivamma D & Dr. Shaila S G has published a patent title, Dynamic Energy Management System for Self-Powered IoT Devices using Intelligent Energy Harvesting on 26th September 2025 with Application No: 202541083566

Dr. U. Pavan Kumar for organizing & participating in the Five Days Faculty Development Program on "DevOps & MLOps" held from 30th June 2025 to 04th July 2025 organized by Department of CSE(Data Science), School of Engineering, Dayananda Sagar University



Dr. U. Pavan Kumar has actively participated in the Faculty Development Program titled "Nurturing Emotional Intelligence: A Journey from Self-Awareness to Conscious Parenting" held on 8th July 2025.

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



Dr. U. Pavan Kumar has successfully completing of a Six Day Faculty Development Program on Prompt Engineering and ChatGPT Utilization" organized by The Department of Information Technology in association with Techno Future India held from July 14th to 19th July 2025.

Dr. U. Pavan Kumar as Reviewer for the 11th International conference on Electronics, Computing and Communication Technologies, IEEE CONNECT (July 10-13, 2025) organized by IEEE Bangalore Section at Sterling's Mac Hotel, Bangalore.



Dr. U. Pavan Kumar as Reviewer for the 03rd IEEE International Conferences on Network, Multimedia, and Information Technology (NMITCON) 2025 organized Nitte Meenakshi Institute of Technology, Bengaluru held on 01st & 02nd August 2025 by IEEE Bangalore Section.

Dr. U. Pavan Kumar has successfully completed the 2-Weeks online FDP on Artificial Intelligence organized by SkillDzire in collaboration with AICTE on 18th August 2025.



Dr. U. Pavan Kumar has actively participated in the One Week Online Faculty Development Programme (FDP) on "Exploring Generative AI: Foundations, Models, and Real-World Applications in Vision and Language" organized by Department of Computer Science & Engineering (AI & ML), LBRCE from 25th to 30th August 2025

Dr. U. Pavan Kumar received a Certificate of Appreciation for serving as a Reviewer for the International Conference on Intelligent Communication Networks and Computational Techniques (ICICNCT-2025), organized by Guru Nanak Dev Engineering College, Bidar during 4th to 6th September 2025



Dr. Santhosh Kumar G & Dr. U. Pavan Kumar has successfully presented the paper titled 'Trustworthy AI-Powered Multimodal Biofeedback for Stress Management: An Explainable, Privacy-Preserving and Fairness-Aware Framework' at the 7th International Conference on Innovative Data Communication Technologies and Applications (ICIDCA 2025) organised by RVS College of Engineering and Technology, Coimbatore, India on 6th to 08th October 2025.

Dr. U. Pavan Kumar act as Reviewer for 2nd International Conference on Software, Systems and Information Technology (SSITCON-2025) Organized by Department of CSE(Cyber Security) in association with CSE, Sri Siddhartha Institute of Technology (SSIT), Tumkur Karnataka on 17th-18th October 2025.



Dr. U. Pavan Kumar act as Reviewer for International Conference on Communication, Computer and Information Technology (IC3IT-2025) Organized at Mysuru Royal Institute of Technology, Mandya, India on 24th & 25th October 2025.

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



Dr. U. Pavan Kumar and Dr. Santhosh Kumar G have submitted an ANRF research proposal titled "AI-Driven Multimodal Intelligence for Scientific Discovery (AIMISD): A Federated Framework for Integrating Genomic, Epigenomic, and Clinical Data," which has been accepted for technical evaluation under the AI for Science and Science of AI (ANRF) scheme, with a proposed funding of ₹74,12,840

Dr. U. Pavan Kumar act as Reviewer for 2nd International Conference on Software, Systems and Information Technology (SSITCON-2025) Organized by Department of CSE(Cyber Security) in association with CSE, Sri Siddhartha Institute of Technology (SSIT), Tumkur Karnataka on 17th-18th October 2025.



Dr. U. Pavan Kumar act as Reviewer for International Conference on Communication, Computer and Information Technology (IC3IT-2025) Organized at Mysuru Royal Institute of Technology, Mandya, India on 24th & 25th October 2025.

Dr. U. Pavan Kumar is a contributing author of a research paper presented at ICTCS 2025. The paper, titled "An Adaptive Machine Learning Framework for Detection and Mitigation of Rogue Access Points (RAPs) in WLAN," was showcased at the 10th International Conference on Information and Communication Technology for Competitive Strategies. The conference was conducted from 15-17 December 2025 and hosted digitally from Jaipur, India.



Dr. Santhosh Kumar G and Dr. U. Pavan Kumar has published a paper titled "Trustworthy AI-Powered Multimodal Biofeedback for Stress Management: An Explainable, Privacy Preserving, and Fairness-Aware Framework", in 2025 7th International Conference on Innovative Data Communication Technologies and Application (ICIDCA) December 2025

Dr. U. Pavan Kumar has successfully participated in the five-day online Faculty Development program on ".Net Core with Angular Technology" Organized with CSE (Data Science) from 22-12-2025 to 26-12-2025



Research Publications

Journal Articles

1. **Pavan Kumar, U.** (2026). Protocol-Sensitive Fingerprint Embedding Analysis Using a Lightweight Hybrid CNN–Transformer Framework. Machine Learning with Applications, 100932. <https://doi.org/10.1016/j.mlwa.2026.100932>. Elsevier. (Q1 Journal)
2. **Pavan Kumar, U., & Santhosh Kumar, G.** (2026). AgroQuali-FSL: A Few-Shot Deep Learning Framework with QualiProtoNet for Automated Quality Grading of Fruits and Vegetables. Scientific Reports. (Q1 Journal)

Conference Proceedings

1. **Pavan Kumar, U.** (2025). An Adaptive Machine Learning Framework for Detection and Mitigation of Rogue Access Points (RAPs) in WLAN. In Proceedings of the International Conference on Information and Communication Technology for Competitive Strategies (ICTCS 2025). Springer Nature.

2. **Pavan Kumar, U.,** Santhosh Kumar, G., & Prapti, B. (2026). Contrast Enhancement in Mammogram Images using CLAHE and CNN-based Approaches. In Proceedings of the 2026 6th International Conference on Expert Clouds and Applications (ICOECA).
3. **Pavan Kumar, U.,** & Santhosh Kumar, G. (2026). Fault Detection in Power Line Communication Systems for Smart Grids by Using One Class Support Vector Machine-Based Autoencoder. In 6G Communications Networking and Signal Processing (SGCNSP 2026), Lecture Notes in Electrical Engineering (Vol. 1437). Springer. https://doi.org/10.1007/978-981-96-7991-1_27
4. **Pavan Kumar, U.,** & Santhosh Kumar, G. (2026). Multimodal Dialogue Systems: Multimodal Transformer Fusion for Using Audio and Text Data. In 6G Communications Networking and Signal Processing (SGCNSP 2026), Lecture Notes in Electrical Engineering (Vol. 1437). Springer. https://doi.org/10.1007/978-981-96-7991-1_35
5. **Pavan Kumar, U.,** & Santhosh Kumar, G. (2026). Signal Processing Approaches for Secure Channel Estimation and Data Transmission in 5G/6G. In 6G Communications Networking and Signal Processing (SGCNSP 2026), Lecture Notes in Electrical Engineering (Vol. 1437). Springer. https://doi.org/10.1007/978-981-96-7991-1_16
6. **Pavan Kumar, U.** (2026). Hybrid Orientation Token and Lightweight Transformer Architecture for Robust Fingerprint Pattern Classification. In Proceedings of the 2nd International Conference on Computing for Sustainability and Intelligent Future (COMPSIF 2026).
7. **Pavan Kumar, U.** (2026). ViT-based Triplet Embeddings with Metric Learning and Lightweight Classifiers for Fingerprint Recognition. In Proceedings of the International Conference on Advanced Scientific Computing & Machine Learning (ASCML 2026).
8. Santhosh Kumar, G., & **Pavan Kumar, U.** (2026). Improved Wild Horse Optimization-Based Deep Neural Network for Speaker Identification and Verification. In 6G Communications Networking and Signal Processing (SGCNSP 2026), Lecture Notes in Electrical Engineering (Vol. 1437). Springer. https://doi.org/10.1007/978-981-96-7991-1_29
9. Santhosh Kumar, G., & **Pavan Kumar, U.** (2026). Speech Emotion Recognition Using Acoustic Feature Extraction with Relief and Hidden Markov Model. In 6G Communications Networking and Signal Processing (SGCNSP 2026), Lecture Notes in Electrical Engineering (Vol. 1437). Springer. https://doi.org/10.1007/978-981-96-7991-1_31

Books

1. Pavan Kumar, U. (2026). Machine Learning: Concepts and Applications. VINSA Publishing. ISBN: 978-81-997970-5-5.

Patents

1. System and Method for Hybrid Wearable–Vision Monitoring of Alzheimer’s Patients with Adaptive Mode Switching and Secure Telehealth Alerts (Application No: 202541125359, Published 09-01-2026).
2. Edge AI-Driven Embedded Computer Vision and Mechatronic Hardware System for Real-Time Classification and Autonomous Segregation of Solid Waste Using Deep Neural Networks (Application No. 202641041475 A, Published 10-04-2026).

Certifications, FDPs & Workshops Attended

1. NPTEL Online Certification Course on 'Natural Language Processing' (Indian Institute of Technology Kharagpur, SWAYAM platform, Jan–Apr 2026 session).
2. Faculty Development Program on 'Data Visualization with Excel and Power BI', conducted under the EICTA Consortium (Joint initiative of MeitY and IITs/NITs/IIITs), 23rd March 2026 to 3rd April 2026.
3. Online Faculty Development Program (FDP) on 'Deep Learning' organized by SkillDzire in collaboration with AICTE (09 March 2026 to 21 March 2026).
4. Five-day Faculty Development Programme on 'Artificial Intelligence with Machine Learning' organized by PSN College of Engineering and Technology, Tirunelveli (09 to 13 February 2026).
5. One Day Faculty Development Program titled 'Cyber Security Essentials for the Digital Era' organized by Sri Chandrasekharendra Saraswathi Viswa Mahavidyalaya (SCSVMV) in association with Pencilbitz (22nd January 2026).

Events Organized & Other Roles

1. Co-coordinator: Workshop on 'Azure AI' (19th February 2026).
2. Co-coordinator: Three-Day Hands-on Workshop on Internet of Things (IoT) (2nd to 4th February 2026).
3. Review Committee Member: International Conference on Electrical, Computer and Energy Technologies (ICECET 2026), reviewed paper on 24th February 2026.



Dr. Dr. Jobin Thomas
Assistant Professor
Department of CSE (Data Science)

Dr. Jobin Thomas has successfully completing the NPTEL Online Certification course on Python for Data Science with a consolidated score of 77% under Indian Institute of Technology Madras during Jul-Aug 2025.



Research Publications

Conference Proceedings

1. **Thomas, J.**, Sanjesh, R., VS, D. P., & Poornima, G. (2026, May). Cognitive Networking using Deep Reinforcement Learning for Real-Time Optimization. In 2026 6th International Conference on Pervasive Computing and Social Networking (ICPCSN) (pp. 150-155). IEEE.
2. Sridevi, S., **Thomas, J.**, Komalavalli, C., Sharma, S., & Gnanaprakash, V. (2026, March). Rug Pulls in Blockchain-Based NFT Markets: Detection Techniques and Risk Mitigation Strategies. In 2026 IEEE International Conference on AI Engineering and Innovations (AIEI) (pp. 1-6). IEEE.
3. Vinitha, V., **Thomas, J.**, George, D., Pavithra, A. C., Vidyashree, K. P., & Yathiraj, G. R. (2026, April). A Unified Semantic Alignment Framework for Robust Text Classification. In 2026 International Conference on Recent Advancement in Electrical, Computer and Communication Technologies (IECCT) (pp. 1-6). IEEE.

Book Published

1. Data-Driven Recommender Systems: Methods and Real-World Applications by **Dr. Jobin Thomas** presents advanced data-driven recommendation techniques and their real-world applications, offering valuable insights for students, researchers, and practitioners (ISBN: 9789375009009).

Reviewer

1. Q1 journal- Elsevier- Information Processing and Management (IPM) Paper titled:- MASSANet: Multiscale Adaptive Spectral-Spatial Dual-path Attention Network for Motor Imagery Decoding From EEG

FDPs Attended

1. Two-week Online Joint Faculty Development Programme on 'CS02: Generative AI in Cyber Security' organized by the Electronics and ICT Academy, IIT Guwahati (08 June 2026 to 19 June 2026).
2. Six-Day Online Faculty Development Programme on 'Research Methodology and Pedagogy for Academic Excellence' conducted by Sir M. Visvesvaraya Institute of Technology (Sir MVIT), Bengaluru (March 2026).

Workshop attended

1. ANRF-PAIR sponsored workshop on "Proposal Writing and Research Ethics in Science and Technology", 6th January 2026. Venue: Bangalore University



Prof. Shivamma D
Assistant Professor
Department of CSE (Data Science)

Research Publication

- N. R, M. K. M. R, K. C, G. F. I, **Shivamma D** and D. George, "Automated Wireless Charging System for Electric Vehicles Using Cloud Control," 2025 International Conference on Recent Innovation in Science Engineering and Technology (ICRISET), CHENNAI, India, 2025, pp. 1-5, doi: 10.1109/ICRISET64803.2025.11252334.
- **D, Shivamma** and Aurobind. G. "Brain Tumor Detection from MRI Scans Using Deep Residual Learning and Morphological Segmentation." 2025 International Conference on Intelligent Communication Networks and Computational Techniques (ICICNCT) (2025): 01-07.
- P. SN, N. Shelke, D. K. J. B. Saini, A. Pimpalkar, C. H. Kumar and **Shivamma D**, "AI-Powered Defense Against Advanced Persistent Threats (APTs): Techniques, Case Studies, and Future Research Directions," 2025 3rd International Conference on Sustainable Computing and Data Communication Systems (ICSCDS), Erode, India, 2025, pp. 826-831, doi: 10.1109/ICSCDS65426.2025.11166697.
- **Shivamma. D** and Shaila. S. G, "Deep Learning Based Analysis for Facial Expression Recognition of Simple and Complex Emotions in Healthcare," 2025 IEEE International Conference for Women in Innovation, Technology & Entrepreneurship (ICWITE), Bangalore, India, 2025, pp. 1-6, doi: 10.1109/ICWITE64848.2025.11307127.

Patents

- Dr. Santhosh Kumar G, Dr. U. Pavan Kumar Prof. Godhandaraman T, **Prof. Shivamma D** & Dr. Shaila S G has published a patent title, Dynamic Energy Management System for Self-Powered IoT Devices using Intelligent Energy Harvesting on 26th September 2025 with Application No: 202541083566
- MedConnect: An AI-Powered, Blockchain-Enabled Medical Chatbot for Accessible Healthcare



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

Prof. Shivamma D has awarded a certificate for AWS SUMMIT India Online on 26th June 2025



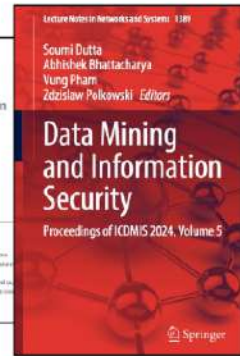
Prof. Shivamma D has presented the research paper entitled Automated wireless charging System for Electric Vehicles using Cloud Control at 1st IEEE International Conference on Recent Innovation in Science Engineering and Technology (ICRISET 2025) held on 1st & 2nd August 2025.

Prof. Shivamma D as Reviewer for the 03rd IEEE International Conferences on Network, Multimedia, and Information Technology (NMITCON) 2025 organized Nitte Meenakshi Institute of Technology, Bengaluru held on 01st & 02nd August 2025 by IEEE Bangalore Section.



Prof. Shivamma D has attended the Cloud Technical Series AI Agents Edition Organized by Google Cloud on 7th August 2025.

Prof. Shivamma D published a conference paper titled "Turkish Raisin Classification Through Deep Learning Prediction Models" in Lecture Notes in Networks and Systems series and part of the Data Mining and Information Security proceedings, Springer 2025.



Prof. Shivamma D received a Certificate of Appreciation for presenting a research paper "Brain Tumor Detection from MRI Scans Using Deep Residual Learning and Morphological Segmentation" at the International Conference on Intelligent Communication Networks and Computational Techniques (ICICNCT-2025). The conference was organized by the Department of Electronics and Communication Engineering, Guru Nanak Dev Engineering College, Bidar, from 4th to 6th September 2025.

Prof. Shivamma D has successfully participated & completed AICTE Training and Learning (ATAL) Academy Faculty Development Program on "Advances in Deep Learning for Medical Imaging and Disease Diagnosis (DL-MIDD 2025)" at Sambalpur University Institute of Information Technology from 14-09-25 to 19-09-25.



Prof. Shivamma D has participated & presented the paper titled "Deep Learning based analysis for facial expression recognition of simple & complex emotions in Healthcare" in the 3rd IEEE Conference for Women in Innovation, Technology and Entrepreneurship (ICWITE 2025) on 26-27 Sep 2025 organized by IEEE Women in Engineering Affinity Group Bangalore Section at B.G.S College of Engineering, Bangalore.



Dr. Shaila S G, Prof. Shivamma D & Dr. Santhosh Kumar C for presenting the research paper entitled "Pharmaceutical Quality Assurance via Transformer- Based Deep Learning Models for Automated Tablet Defect Detection" at The IEEE Technical sponsored 2nd International Conference on Artificial Intelligence and Knowledge Discovery in Concurrent Engineering (ICECONF 2025) held at St. Joseph's Institute of Technology, Chennai on 09th & 10th October 2025.

Prof. Monish L, Prof. Shivamma D, Prof. Manjula M & Prof. Sindhu A Published paper titled "Optimizing Forensic DNA Profiling: A Novel Classifier Approach" In: Sharma, H., Shrivastava, V., Tripathi, A.K., Wang, L. (eds) Communication and Intelligent Systems. ICCIS 2024. Lecture Notes in Networks and Systems, vol 1371. Springer, Singapore.



Prof. Shivamma D has actively participated & completed One Week Faculty Development Program on "Recent Advancements in Artificial Intelligence (AI) & ML" from 30th June to 04th July 2025. Organized by Department of ECE St. Joseph's College of Engineering in association with STEP-National Institute of Technology, Surathkal and Pantech e Learning.



Shivamma D. successfully completed Module 1: Orientation towards Technical Education and Curriculum Aspects under the National Initiative for Technical Teachers Training (NITTT), organized by AICTE through SWAYAM, in September 2025.

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



Research Publications

Conference Proceedings

1. **Shivamma, D., & Shaila, S. G.** (2026). Vision Transformer Driven Sustainable Classification of Compound Facial Expressions Using Morphological Features. In Proceedings of the 2026 International Conference on Innovative Computing, Intelligent Communication and Smart Electrical Systems (ICSSES). IEEE. <https://doi.org/10.1109/ICSSES66558.2026.11478858>
2. **Shivamma, D., Shaila, S. G., & Santhosh Kumar, G.** (2025). Pharmaceutical Quality Assurance via Transformer-Based Deep Learning Models for Automated Tablet Defect Detection. In Proceedings of the 2025 2nd International Conference on Artificial Intelligence and Knowledge Discovery in Concurrent Engineering (ICECONF) (pp. 1-6). IEEE. <https://doi.org/10.1109/ICECONF65644.2025.11379551>
3. **Shivamma, D., Shaila, S. G., Monish, L., Chundi, R., & Sumana, S. G.** (2026). Deep learning for emotion recognition—CNNs, RNNs, transformers, and self-supervised learning techniques. In Affective artificial intelligence: Fundamentals, challenges, and applications (pp. 77–104). John Wiley & Sons. <https://doi.org/10.1002/9781394422760.ch4>
4. **Shivamma, D., Shaila, S. G., Monish, L., Chundi, R., & Sumana, S. G.** (2026). Affective AI in healthcare and mental health—AI-driven emotion detection for diagnosing depression, anxiety, and autism spectrum disorders. In Affective artificial intelligence: Fundamentals, challenges, and applications (pp. 175–191). John Wiley & Sons. <https://doi.org/10.1002/9781394422760.ch8>
5. **Monish, L., Shaila, S. G., Chundi, R., Sumana, S. G., Shivamma, D., & Manjula, M.** (2026). Emotion recognition techniques: Facial expression analysis, speech emotion recognition, physiological signal processing, and multimodal approaches. In Affective artificial intelligence: Fundamentals, challenges, and applications (pp. 1–24). John Wiley & Sons. <https://doi.org/10.1002/9781394422760.ch1>

Book published

1. Big Data Analytics, authored by **Shivamma D**, was published in 2026 through Infinite Learning Solutions and carries the ISBN 978-81-69144-00-1. The book addresses core principles and practical applications within the field of big data analytics. Its registration is officially recorded with the Indian ISBN Agency (RRRNA) under the Ministry of Education, Government of India.

Patents

1. System and Method for Voice-Activated Emergency Alerting and Real-Time Location Tracking (Application No. 202641012364 A, Published 20-02-2026)
2. Terrain-Adaptive Wireless Hexapod Robot with Tripod Gait Control and Integrated Real-Time Visual Monitoring (Application No. 202641012357 A, Published 20-02-2026)
3. Real-Time EEG-Based P300 System for Neurocognitive Anomaly Detection in ADHD and Autism (Application No. 202641012359 A, Published 20-02-2026)
4. Noise-Resilient Handwritten Language Recognition Method Integrating Handcrafted and Deep Spatial-Temporal Features (Application No. 202541123092 A, Published 02-01-2026)

Events Organized

1. Faculty Coordinator: DSU Annual TechFest – CELESTAI 2026 (23rd to 25th April 2026).
2. Co-coordinator: Two-day hands-on MATLAB Workshop titled 'From Data to Deployment: AI Workflows for Data Science Using MATLAB' (5th and 6th February 2026).
3. Organizer: Career Readiness & Placement Orientation Program for 6th-semester students (6th February 2026).



Prof. Monish L
Assistant Professor
Department of CSE (Data Science)

Research Publication

- **Prof. Monish L**, and Dr. S. G. Shaila, "A Hybrid Fuzzy CNN-LSTM Approach for Emotion Recognition from EEG-ECG Physiological Signals", Eng. Technol. Appl. Sci. Res., vol. 15, no. 6, pp. 30405-30411, Dec. 2025.
- **Monish, L.**, Shaila, S.G. (2026). Electrocardiogram Signal-Based Analysis and Prediction of Emotions Using Deep Networks. In: Nanda, S.J., Mittal, H., Lim, MH. (eds) Proceedings of International Conference on Paradigms of Communication, Computing and Data Analytics. PCCDA 2025 2025. Algorithms for Intelligent Systems. Springer, Singapore. https://doi.org/10.1007/978-981-96-6843-4_18
- P. S. N. N. Shelke, D. K. Jang Bahadur Saini, A. Pimpalkar, G. H. Kumar and **Monish L**, "Blockchain-Enabled Federated Learning for Privacy-Preserving AI," 2025 9th International Conference on Inventive Systems and Control (ICISC), Coimbatore, India, 2025, pp. 1536-1543, doi: 10.1109/ICISC65841.2025.11187566.
- Rekha R Nair, Tina Babu, S.G. Sumana, **L. Monish** published Data-driven optimization for cafe revenue enhancement: A comprehensive analysis and strategy development

Patents

- AI BASED NETWORK THREAT DETECTING DEVICE
- AI-Enabled Automated Curriculum Optimization System for Sustainable Educational Development

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



Prof. Monish L, Prof. Shivamma D, Prof. Manjula M & Prof. Sindhu A Published paper titled "Optimizing Forensic DNA Profiling: A Novel Classifier Approach" In: Sharma, H., Shrivastava, V., Tripathi, A.K., Wang, L. (eds) Communication and Intelligent Systems. ICCIS 2024. Lecture Notes in Networks and Systems, vol 1371. Springer, Singapore.



Prof. Monish L & Dr. Shaila S C has participated & presented the paper titled “Mpx Risk Forecasting: Integrating Neural Networks and Public Sentiment Analysis” in the 3rd IEEE Conference for Women in Innovation, Technology and Entrepreneurship (ICWITE 2025) on 26-27 Sep 2025 organized by IEEE Women in Engineering Affinity Group Bangalore Section at B.C.S College of Engineering, Bangalore.

Dr. Shaila S. G, Prof. Monish L and Prof. Manjula M presented a research paper titled “Neuro-Acoustic Approach to Emotion Recognition Using EEG and Audio Signals.” The conference was organized in association with reputed academic and research organizations and publishers. A Certificate of Appreciation was awarded at the 6th International Conference on Data Engineering and Communication Technology (ICDECT-2025) held on 1st-2nd December 2025 at Bhubaneswar Engineering College, Bhubaneswar.



Research Publications

- Shivamma, D., Shaila, S. G., **Monish, L.**, Chundi, R., & Sumana, S. G. (2026). Deep learning for emotion recognition: CNNs, RNNs, transformers, and self-supervised learning techniques. In Affective Artificial Intelligence: Fundamentals, Challenges, and Applications.
- Monish, L.**, Shaila, S. G., Chundi, R., Sumana, S. G., & Manjula, M. (2026). Multi-modal emotion detection system: Fusion of facial, voice, and physiological data for improved emotion understanding. In Affective Artificial Intelligence: Fundamentals, Challenges, and Applications.
- Shivamma, D., Shaila, S. G., **Monish, L.**, Chundi, R., & Sumana, S. G. (2026). Affective AI in healthcare and mental health: AI-driven emotion detection for diagnosing depression, anxiety, and autism spectrum disorders. In Affective Artificial Intelligence: Fundamentals, Challenges, and Applications.
- Monish, L.**, Shaila, S. G., Chundi, R., Sumana, S. G., Shivamma, D., & Manjula, M. (2026). Emotion recognition techniques: Facial expression analysis, speech emotion recognition, physiological signal processing, and multimodal approaches. In Affective Artificial Intelligence: Fundamentals, Challenges, and Applications.
- Shaila, S. G., **Monish, L.**, Sumana, S. G., & Chundi, R. (2026). Natural language processing for sentiment and emotion analysis: AI-driven methods for detecting emotions in text, chatbots, and social media. In Affective Artificial Intelligence: Fundamentals, Challenges, and Applications.

6. Patil, S., Parwekar, S. G. S. P., **Monish, L.**, & Rajesh, T. M. (2026). Empowering vision: Smart glasses for the visually impaired community. In *Signal Processing, Telecommunication & Embedded Systems: Automation and Intelligent Technologies*.
7. Abhinav, R. B., Begum, D., **Monish, L.**, Manjula, M., Siri, A. K., & Thungashree, I. L. (2026). Enhanced iris recognition framework using hybrid cosine and Hamming similarity measures. In *2026 International Conference on Smart Electronic Devices and Intelligent Systems*.
8. **Monish, L.**, Rajesh, T. M., Shaila, S. G., Vamshi, V., Sumana, S. G., & Kumar, U. P. (2026). Piezoelectric sensor based apnea disorder prediction using IoT monitoring system. *AIP Conference Proceedings*, 3386(1), 020031.
9. Shaila, S. G., Kumar, U. P., Sumana, S. G., Vamshi, V. R., Rajesh, T. **Monish.**, et al. (2026). MobileNet-based driver drowsiness detection and monitoring system. *AIP Conference Proceedings*, 3386(1), 020019.
10. **Monish, L.**, & Shaila, S. G. (2026). Electroencephalogram signal processing based emotion analysis and recognition using deep networks. *AIP Conference Proceedings*, 3386(1), 020030.
11. Suha, S., Amritha, R., Manjula, M., **Monish, L.**, Chandrakala, L., & Nandini, K. (2026). Secure multimedia image encryption via MPHT shuffling and Bogdonov map-driven substitution. In *Proceedings of the 9th International Conference on Intelligent Computing and Control Systems (ICICCS 2026)*.
12. **Monish, L.**, Shaila, S. G., Manjula, M., Nandini, S., Sheetal, P., & Rao, G. S. S. (2026). Sustainable data-driven aquatic ecosystem. In *Data Science and Big Data Analytics: Proceedings of IDBA 2025 (Vol. 1*

Prof. Manjula M has participated & presented the paper titled "Adaptive Audio Steganography using Syndrome-Trellis Codes (STC) and GOAS" in the 3rd IEEE Conference for Women in Innovation, Technology and Entrepreneurship (ICWITE 2025) on 26-27 Sep 2025 organized by IEEE Women in Engineering Affinity Group Bangalore Section at B.G.S College of Engineering, Bangalore.



Prof. Manjula M has presented the paper titled Multimodal Machine Learning Approach for Early Detection and Classification of Breast Cancer using Imaging and Genomic Data in International Conference on Biomedical Engineering and Sustainable Healthcare Organized by Department of Biomedical Engineering, Manipal Institute of Technology, Manipal Academy of Higher Education, Manipal August 08 - 09, 2025.

Prof. Monish L, Prof. Shivamma D, Prof. Manjula M & Prof. Sindhu A Published paper titled "Optimizing Forensic DNA Profiling: A Novel Classifier Approach" In: Sharma, H., Shrivastava, V., Tripathi, A.K., Wang, L. (eds) Communication and Intelligent Systems. ICCIS 2024. Lecture Notes in Networks and Systems, vol 1371. Springer, Singapore.





Prof. Manjula M
Assistant Professor
Department of CSE (Data Science)

Research Publication

- Tina Babul , Rekha R Nair, **Manjula M** , Manjula V. and Chaithra Shree P published Integrating IoT and Sensors for Comprehensive Road Safety: A Systematic Approach to Accident Prevention
- Tina Babu, Rekha R. Nair, **M. Manjula**, Utso Bhattacharyya published Effective placement prediction for educational institutions: Insights from machine learning

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



Prof. Manjula M has presented the paper titled Multimodal Machine Learning Approach for Early Detection and Classification of Breast Cancer using Imaging and Genomic Data in International Conference on Biomedical Engineering and Sustainable Healthcare Organized by Department of Biomedical Engineering, Manipal Institute of Technology, Manipal Academy of Higher Education, Manipal August 08 - 09, 2025.

Prof. Manjula M has participated & presented the paper titled "Adaptive Audio Steganography using Syndrome-Trellis Codes (STC) and GOAS" in the 3rd IEEE Conference for Women in Innovation, Technology and Entrepreneurship (ICWITE 2025) on 26-27 Sep 2025 organized by IEEE Women in Engineering Affinity Group Bangalore Section at B.G.S College of Engineering, Bangalore.



Prof. Manjula M has presented the paper titled Multimodal Machine Learning Approach for Early Detection and Classification of Breast Cancer using Imaging and Genomic Data in International Conference on Biomedical Engineering and Sustainable Healthcare Organized by Department of Biomedical Engineering, Manipal Institute of Technology, Manal Academy of Higher Education, Manal August 08 - 09, 2025.

Prof. Monish L, Prof. Shivamma D, Prof. Manjula M & Prof. Sindhu A Published paper titled "Optimizing Forensic DNA Profiling: A Novel Classifier Approach" In: Sharma, H., Shrivastava, V., Tripathi, A.K., Wang, L. (eds) Communication and Intelligent Systems. ICCIS 2024. Lecture Notes in Networks and Systems, vol 1371. Springer, Singapore.



Research Publications

1. Monish, L., Shaila, S. G., **Manjula, M.**, Nandini, S., Sheetal, P., & Rao, G. S. S. (2026). Sustainable data-driven aquatic ecosystem. In Data Science and Big Data Analytics: Proceedings of IDBA 2025 (Vol. 1, pp. 183–191). Springer.
2. Sameia Suha, N. K., Amritha, R., Manjula, M., Monish, L., & Chandrakala, L. (2026). Secure multimedia image encryption via MPHT shuffling and Bogdonov map-driven substitution. In Proceedings of the 2026 9th International Conference on Intelligent Computing and Control.
3. Abhinav, R. B., Begum, D., Monish, L., **Manjula, M.**, Siri, A. K., & Thungashree, I. L. (2026). Enhanced iris recognition framework using hybrid cosine and Hamming similarity measures. In Proceedings of the 2026 International Conference on Smart Electronic Devices and Intelligent Systems.

Book chapters

1. Monish, L., Shaila, S. G., Chundi, R., Sumana, S. G., & **Manjula, M.** (2026). Multi-modal emotion detection system: Fusion of facial, voice, and physiological data for improved emotion understanding. In Affective Artificial Intelligence: Fundamentals, Challenges, and Applications.

2. Monish, L., Shaila, S. G., Chundi, R., Sumana, S. G., Shivamma, D., & **Manjula, M.** (2026). Emotion recognition techniques: Facial expression analysis, speech emotion recognition, physiological signal processing, and multimodal approaches. In Affective Artificial Intelligence: Fundamentals, Challenges, and Applications.



Prof. Sindhu A
Assistant Professor
Department of CSE (Data Science)

Research Publication

- **A Sindhu, S Arumugam**, published "Agent-Based Generative AI Model for Cost-Aware Automation in Machine Learning Pipelines," 2025, IEEE Access 13, 192189 - 192209
- A. Tomar, V. Kumar, S. Zaid, S. Waseem, **Sindhu A** and S. A, "Emotional Support System for Mental Health and Personalized Recommendation," 2025 Third International Conference on Networks, Multimedia and Information Technology (NMITCON), BENGALURU, India, 2025, pp. 1-7, doi: 10.1109/NMITCON65824.2025.11188312. keywords: {Emotion recognition;Translation;Mental health;Medical services;Predictive models;Market research;Real-time systems;Multilingual;Long short term memory;Monitoring;Natural language processing (NLP);machine learning (ML);emotion detection;multilingual text classification;BERT;LSTM;affective computing;real-time sentiment analysis;mental health support;Flask web application},
- **Prof. Sindhu A** & Dr. Suresh Published a paper titled "Emotional Support System for Mental Health and Personalized Recommendation" at the IEEE 2025 Third International Conference on Networks, Multimedia and Information Technology (NMITCON 2025) held in Bengaluru, India.

Patents

- Dr. Suresh Arumugam, Sindhu A has Published a patent Title "A SYSTEM AND METHOD FOR CONTEXT-AWARE SENTIMENT ANALYSIS USING HIERARCHICAL LONG SHORT-TERM MEMORY (LSTM) NETWORKS" on date 5th Sep 2025 with Application no:202541074679.
- Dr. Suresh Arumugam, Sindhu A has Published a patent Title "AUTOMATED MACHINE LEARNING SYSTEM FOR GENERATING PREDICTIVE MODELS TAILORED TO INDUSTRY-SPECIFIC OPTIMIZATION" on date 5th Sep 2025 with Application no: 202541080192.

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



Prof. Sindhu A certified as an Oracle Cloud Infrastructure Data Science Professional upon successfully completing the global certification course offered by Oracle

Dr. Suresh A & Prof. Sindhu A has successfully presented the paper titled "Semantic Information Retrieval using Transformer-based Embeddings and Vector Similarity Search" at the 7th International Conference on Innovative Data Communication Technologies and Applications (ICIDCA 2025) organised by RVS College of Engineering and Technology, Coimbatore, India on 6th to 08th October 2025.



Dr. Suresh A & Prof. Sindhu A has successfully presented the paper titled "Web-based Real-Time Detection of Compound Facial Emotions with Deep Learning" at the 7th International Conference on Innovative Data Communication Technologies and Applications (ICIDCA 2025) organised by RVS College of Engineering and Technology, Coimbatore, India on 6th to 08th October 2025.

Prof. Sindhu A presented the paper titled "AvianTrack: Real-Time Bird Species Detection and Classification in Streaming Video via YOLOv8" at International Conference on Artificial Intelligence and Networking (ICAIn-2025) organized jointly by BITS Pilani, Dubai Campus, UAE in association with the Indian Institute of Information Technology, Allahabad, India & Universal Inovators, Delhi, India on 6th - 7th October 2025.



Prof. Monish L, Prof. Shivamma D, Prof. Manjula M & Prof. Sindhu A Published paper titled "Optimizing Forensic DNA Profiling: A Novel Classifier Approach" In: Sharma, H., Shrivastava, V., Tripathi, A.K., Wang, L. (eds) Communication and Intelligent Systems. ICCIS 2024. Lecture Notes in Networks and Systems, vol 1371. Springer, Singapore.

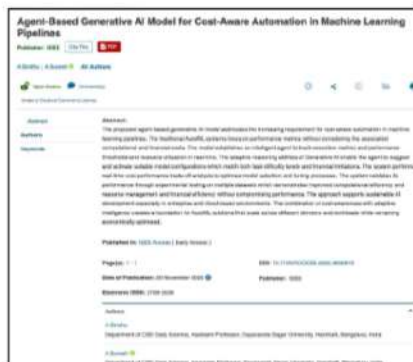
Sindhu. A (Asst Prof, CSE -Data Science Dept.) and Dr. Suresh Arumugam has published a patent titled "A System And Method For Context-aware Sentiment Analysis Using Hierarchical Long Short-term Memory (Lstm) Networks" Application no:202541074679 on 5/09/2025

Application Details	
APPLICATION NUMBER	202541074679
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	04/09/2025
APPLICANT NAME	1. Dr. Suresh A 2. Dr. Suresh M 3. Sindhu A 4. Suresh M 5. Suresh M
TITLE OF INVENTION	A SYSTEM AND METHOD FOR CONTEXT-AWARE SENTIMENT ANALYSIS USING HIERARCHICAL LONG SHORT-TERM MEMORY (LSTM) NETWORKS
FIELD OF INVENTION	COMPUTER SCIENCE
E-MAIL (AS PER RECORD)	asuram@sgu.ac.in
ADDITIONAL E-MAIL (As Per Record)	
E-MAIL (UPDATED ONLINE)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	
PUBLICATION DATE (U/S 11A)	04/09/2025

Application Details	
APPLICATION NUMBER	202541080192
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	24/09/2025
APPLICANT NAME	Dayananda Sagar University
TITLE OF INVENTION	AUTOMATED MACHINE LEARNING SYSTEM FOR GENERATING PREDICTIVE MODELS TAILORED TO INDUSTRY-SPECIFIC OPTIMIZATION
FIELD OF INVENTION	COMPUTER SCIENCE
E-MAIL (AS PER RECORD)	asuram@sgu.ac.in
ADDITIONAL E-MAIL (As Per Record)	
E-MAIL (UPDATED ONLINE)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	
PUBLICATION DATE (U/S 11A)	09/09/2025

Sindhu. A (Asst Prof, CSE -Data Science Dept.) and Dr. Suresh Arumugam has published a patent titled "Automated Machine Learning System For Generating Predictive Models Tailored To Industry-Specific Optimization" Application no: 202541080192 on 5/09/2025.

Prof. Sindhu has successfully completed a Faculty Development Program on Modern Web Development & AI Integration under the Next Gen Employability Program during 10th November to 14th November 2025.



Sindhu. A (Asst Prof, CSE -Data Science Dept.) and Dr. Suresh Arumugam has published a paper titled "Agent-Based Generative AI Model for Cost-Aware Automation in Machine Learning Pipelines" in the journal "IEEE Access" that has a high Impact Factor of 3.6 & Country Rank (SJR) of Q1. Journal Digital Object Identifier: 10.1109/ACCESS.2025.3635613

Research Publications

Conference Proceedings

1. **Sindhu, A.** (2026). An Explainable Framework for Anomaly Detection in Database Query Logs Using Isolation Forest and SHAP. In Proceedings of the Third International IEEE Conference on Trends in Quantum Computing and Emerging Business Technologies (TQCEBT'26). IEEE.
2. **Sindhu, A.** (2026). Multimodal AI Integration: Text, Speech, and Image for Human Interface. In Proceedings of the 2026 2nd International Conference on Cognitive Computing in Engineering, Communications, Sciences and Biomedical Health Informatics (IC3ECSBHI). IEEE.
3. **Sindhu, A., & Arumugam, S.** (2026). Efficient Secure Aggregation in Federated Learning for Edge Computing. In Proceedings of the 6th International Conference on Image Processing and Capsule Networks (ICIPCN 2026).
4. **Sindhu, A., & Arumugam, S.** (2026). Exploratory Analysis and Temporal Dynamics of Air Pollution in Bengaluru. In Proceedings of the 6th International Conference on Communication, Computing & Industry 6.0. IEEE.

5. **Sindhu A**(2026). An Integrated Dual-Headed CNN–LLM Framework for Simultaneous Alzheimer’s Stage and Brain Tumor Classification from MRI Scans. In Proceedings of the 2026 International Conference on Computing Theory and Wireless Communications (ICCTWC). IEEE.

Patents

1. IoT-Based Smart Irrigation Optimization System for Efficient Water and Power Utilization (Application No. 202641025673 A, published on 13/03/2026).
2. Agent-Based Generative AI Model for Cost-Aware Automation in Machine Learning Pipelines (Published Indian Patent, June 2026).

FDPs Attended

1. 6 Days National Level Faculty Development Program (FDP) on 'Generative & Agentic AI – Tools & Demo's' organized by Sardar Vallabhbhai National Institute of Technology (SVNIT), Surat (16th to 21st February 2026).

Events Organized & Other Roles

1. AI Skills for High-Package Tech Careers: Guidance from Industry Experts.



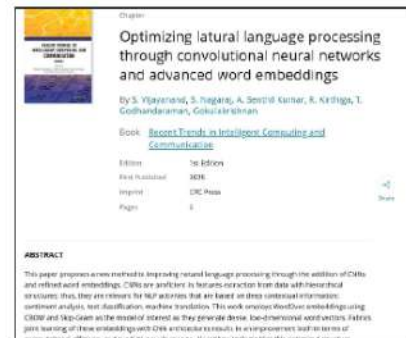
Prof. Godhandaraman T
Assistant Professor
Department of CSE (Data Science)

Research Publication



Prof. Godhandaraman T published a Q2 Journal title Blockchain-Enabled Medical Waste Management System for Enhanced Traceability, Safety and Environmental Protection in the International Journal of Advances in Soft Computing and its Applications. July 2025.

Prof. Godhandaraman T has Published a book chapter title "Optimizing Natural language Processing through Convolutional Neural Networks and advanced word embeddings" at Recent Trends in Intelligent Computing and Communication on 30th September 2025 by CRC Press London.



Patents

- Dr. Santhosh Kumar G, Dr. U. Pavan Kumar **Prof. Godhandaraman T**, Prof. Shivamma D & Dr. Shaila S G has published a patent title, Dynamic Energy Management System for Self-Powered IoT Devices using Intelligent Energy Harvesting on 26th September 2025 with Application No: 202541083566

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



Prof. Godhandaraman T has successfully participated & completed AICTE Training And Learning (ATAL) Academy FDP on Recent Advances in IOT and AI for a smarter Future for Revolutionizing Society at Academy of maritime Education and Training deemed to be University from 13-10-2025 to 18-10-2025.



Prof. Godhandaraman T has successfully presented a research paper titled “Federated Learning in Agriculture: Current Advances, Open Challenges, and Future Horizons.” and “Federated Digital Twin and Blockchain Framework for Lunar/Deep-Space Waste-to-Resource Circularity,” the conference was organized by the Department of Computer Science and Engineering, Nandha-Engineering-College, Erode. The event was held from December 1-3, 2025, bringing together researchers and experts in next-generation networks and cybernetics. A Certificate of Presentation was awarded at the IEEE-sponsored International Conference on NexGen Networks and Cybernetics (IC2NC 2025)

Research Publications

Conference Proceedings

1. **Godhandaraman, T.** Nanosatellite and IoT-Enabled Climate-NDVI Data Fusion for Accurate Wheat Yield Prediction (10th International Conference on Communication and Electronics Systems (ICCES-2025))
2. **Godhandaraman, T.** Federated Digital Twin and Blockchain Framework for Lunar/Deep-Space Waste-to Resource Circularity (2025 International Conference on NexGen Networks and Cybernetics (IC2NC))
3. **Godhandaraman, T.** Federated Learning in Agriculture: Current Advances, Open Challenges, and Future Horizons (2025 International Conference on NexGen Networks and Cybernetics (IC2NC))
4. **Godhandaraman, T.** Hybrid 3D Dual-Path Transformer and Residual Attention U-Net for Efficient Brain Tumor Segmentation from MRI Scans (2025 Modern Electronics Devices and Intelligent Communication Systems (MEDCOM))
5. **A Godhandaraman, T.** Quantum Assisted Secure Data Transmission Architecture for Hybrid Classical Quantum Communication Systems (2026 International Conference on Electronic Systems and Intelligent Computing (ICESIC))

6. **Godhandaraman, T.** Hybrid Quantum-Classical Concept Drift Detection Framework for Smart Agriculture Sensor Stream (2026 International Conference on Computer Networks and Inventive Communication Technologies (ICCNCT))
7. **Godhandaraman, T.** Federated Learning with Zero-Knowledge Proofs for Healthcare: A Survey (2026 1st International Conference on AI, Data Science, Cyber Security and Smart Manufacturing for Sustainable Development (ICADCS))

Patents

1. System and Method for Dual-Site Multimodal Workplace Wellness Monitoring (Published 16.01.2026).
2. Autonomous Multimodal Intelligence System with Cross-Modal Attention and Bio-Physiological Root-Zone Digital Twin for Real-Time Rice Yield and Grain Quality Optimization (Published 20.03.2026).
3. A Pattern-Driven Deep Learning Time-Optimized Crop Yield Prediction System (Published 20.03.2026).
4. Method and System for Autonomous Multi-Modal Distress Detection and Secure Forensic Evidence Generation (Published 20.03.2026).
5. Advanced Rail–Road Collision Prevention and Disaster-Aware Transport Safety Network (Published 20.03.2026).
6. Hybrid Edge-Integrated Digital Twin–Based Multimodal Physiological Health Monitoring and Predictive Risk Assessment System and Method thereof (Published 20.03.2026).
7. Adaptive Soft-Robotic ExoSleeve with Multimodal Biofeedback, Neuro-Muscular Digital Twin, and Learning-Based Personalized Rehabilitation Control (Published 20.03.2026).
8. System and Method for Predicting and Preventing Hospital-Acquired Infections using Digital Twin (Published 20.03.2026).
9. System and Method for Adaptive Healthcare Robotics Using Reinforcement Learning, Multimodal Physiological Sensing, and Digital Twin-Validated Intervention (Published 20.03.2026).
10. Autonomous Multi-Terrain Interplanetary Explorer with Reconfigurable Wheel–Leg Mobility (Published 20.03.2026).
11. A Swarm-Intelligence-Based Autonomous Robotic Ecosystem for Predictive Maintenance and Adaptive Self-Repair of Space Infrastructure (Published 20.03.2026).
12. A Self-Optimizing Mechatronic Actuation and Control System with Multi-Sensor Fusion and Self-Healing Mechanisms (Published 20.03.2026).
13. A Soil Breath Analyzer Probe for Real-Time Soil Health and Nutrient Loss Prediction (Published 26.06.2026).

Books & Book Chapters

1. Godhandaraman, T. (2026). Prompt to Product: The Generative AI Revolution. VINSA Publishing. ISBN: 978-9374152829.

Events Organized

1. Organizer: Career Readiness & Placement Orientation Program for 6th-semester students (6th February 2026).
2. AI Skills for High-Package Tech Careers: Guidance from Industry Experts



Prof. Chandrakala L
Assistant Professor
Department of CSE (Data Science)

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



Research Publications

1. Bharath Mudanahalli Bhaskarachar, Mala Boppanahalli Appaiah , Pooja Shree Hemalatha Ravikumar, Sharanabasappa Tadkal, **Chandrakala Lingaraju**, S S Ashwini (2026)-"Adaptive Trust-Driven Federated Learning With Blockchain for Secure AI Healthcare Diagnostics". Security and Privacy, 9(4)
2. Sameia Suha, Amritha R, Manjula Maddanna, Monish Lokesh Reddy, **Chandrakala Lingaraju**, Nandini Krishappa (2026)-"Secure Multimedia Image Encryption via MPHT Shuffling and Bogdonov Map-Driven Substitution". 2026 9th International Conference on Intelligent Computing and Control Systems (ICICCS), (),Page 1682 - 1687.



Prof. Prapti Bhattacharjee
Assistant Professor
Department of CSE (Data Science)

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

Research Publications

1. **Prapti, Bhattacharjee** (2026). Contrast Enhancement in Mammogram Images using CLAHE and CNN-based Approaches. In Proceedings of the 2026 6th International Conference on Expert Clouds and Applications (ICOECA).
2. **Prapti Bhattacharjee** (2026). Multimodal AI Integration: Text, Speech, and Image for Human Interface. In Proceedings of the 2026 2nd International Conference on Cognitive Computing in Engineering, Communications, Sciences and Biomedical Health Informatics (IC3ECBH). IEEE.
3. **Prapti Bhattacharjee** (2026). Efficient Secure Aggregation in Federated Learning for Edge Computing. In Proceedings of the 6th International Conference on Image Processing and Capsule Networks (ICIPCN 2026).

Events Organized

1. Co-coordinator: Workshop on 'Azure AI' (19th February 2026).
2. Co-coordinator: Three-Day Hands-on Workshop on Internet of Things (IoT) (2nd to 4th February 2026).



Prof. Mithun Kumar
Assistant Professor
Department of CSE (Data Science)



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

Prof. Mithun Kumar has actively participated in a two - weeks Online Joint Faculty Development Programme on "AI for Teaching and Learning" jointly organised by Electronics and ICT Academies held from 18 to 29 August, 2025 under the "Scheme of financial assistance for setting up of Electronics and ICT Academies" of the Ministry of Electronics and Information Technology (MeitY), Government of India



Prof. Mithun Kumar for presenting the research paper entitled "Carbon-Aware AI Workload Scheduling with Renewable Energy Sources" at The IEEE Technical sponsored 2nd International Conference on Artificial Intelligence and Knowledge Discovery in Concurrent Engineering (ICECONF 2025) held at St. Joseph's Institute of Technology, Chennai on 09th & 10th October 2025.

Research Publications

1. **Kumar, M.** (2026). Emotion-Adaptive Intelligent Systems Using Multisensory Data Fusion. In Proceedings of the 2026 International Conference on Intelligent Computing (ICoNIC).
2. **Kumar, M.** (2026). Energy Efficient TinyML Models for Intelligent Wearable Devices. In Proceedings of the 2026 International Conference on Intelligent Computing (ICoNIC).

Events Organized

1. AI Skills for High-Package Tech Careers: Guidance from Industry Experts



Prof. Megha Chandel
Assistant Professor
Department of CSE (Data Science)



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

Prof. Megha Chandel has actively participated in the Faculty Development Program titled "Nurturing Emotional Intelligence: A Journey from Self-Awareness to Conscious Parenting" held on 8th July 2025.





Prof. Kishor Malakar
Assistant Professor
Department of CSE (Data Science)

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



Prof. Kishor Malakar has actively participated in the Faculty Development Program titled "Nurturing Emotional Intelligence: A Journey from Self-Awareness to Conscious Parenting" held on 8th July 2025.

Research Publications

1. **Malakar, K.** (2026). An Integrated Dual-Headed CNN–LLM Framework for Simultaneous Alzheimer’s Stage and Brain Tumor Classification from MRI Scans. In Proceedings of the 2026 International Conference on Computing Theory and Wireless Communications (ICCTWC). IEEE.
2. **Malakar, K.** (2026). GeoAI Forecasting: ML models for earthquake prediction using satellite data. In Proceedings of the 2026 International Conference on Emerging Trends and Technologies on Intelligent Systems (ETTIS). Springer.

Events Organized

1. Co-coordinator: Workshop on 'Azure AI' (19th February 2026).
2. Co-coordinator: Three-Day Hands-on Workshop on Internet of Things (IoT) (2nd to 4th February 2026).

FDPs Attended

1. Faculty Development Program on 'Data Visualization with Excel and Power BI', conducted under the EICTA Consortium (16th March 2026 to 28th March 2026).



Prof. Souramita Bhowmik
Assistant Professor
Department of CSE (Data Science)

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



Prof. Souramita Bhowmik has actively participated in the Faculty Development Program titled “Nurturing Emotional Intelligence: A Journey from Self-Awareness to Conscious Parenting” held on 8th July 2025.

Prof. Souramita Bhowmik has actively participated in the 5 Day Hands on Faculty Development Program on “Entangle 25: A Hands-on workshop on Quantum Computing and its Emerging Paradigms” Organized by the Department of Computer Science & Technology, Dayananda Sagar University, held from 06th to 10th August 2025.



Prof. Souramita Bhowmik has actively participated in a two - weeks Online Joint Faculty Development Programme on “AI for Teaching and Learning” jointly organized by Electronics and ICT Academy, IIT Guwahati, held from 18 to 29 August, 2025 under the “Scheme of financial assistance for setting up of Electronics and ICT Academies” of the Ministry of Electronics and Information Technology (MeitY), Government of India

Prof. Souramita Bhowmik for extending her support to PyNet Labs Private Limited for organising one day workshop on Networking Fundamentals on 7th October 2025 held at Shri Khushal Das University conducted by Pynet Labs.



Research Publications

Conference Proceedings

1. **Bhowmik, S.** (2026). Multimodal AI Integration: Text, Speech and Image for Human Interface. In Proceedings of the 2nd IEEE International Conference on Cognitive Computing in Engineering, Communications, Sciences and Biomedical Health Informatics (IC3ECSBHI-2026).
2. **Bhowmik, S.** (2026). Water Loss Management: A Study Using Fuzzy Approach. In Proceedings of the 8th International Conference on Engineering & Advancement in Technology (ICEAT 2026).

Events Organized & Attended

1. Organizer: ALUMNI TALK–III: Alumni Tales – A Data Science Journey (5th February 2025).
2. Participant: Tech Talk Session delivered by Mark Verchinko, CEO and Founder, RedDuck, Ukraine (7th April 2026).



Prof. Shashank Shekhar
Assistant Professor
Department of CSE (Data Science)

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



Dr. Shaila S. C, Prof. Shashank Shekar presented a research paper titled "A Robust Video Steganography Framework with a Decoy Extraction Mechanism for Enhanced Security". The conference was organized in association with reputed academic and research organizations and publishers. A Certificate of Appreciation was awarded at the 6th International Conference on Data Engineering and Communication Technology (ICDECT-2025) held on 1st-2nd December 2025 at Bhubaneswar Engineering College, Bhubaneswar.

FDPs Attended

1. Faculty Development Program on 'Data Visualization with Excel and Power BI', conducted under the EICTA Consortium (16th March 2026 to 28th March 2026).



Prof. Mriganka Das
Assistant Professor
Department of CSE (Data Science)

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



Prof. Snigdha Sikha Kashyap
Assistant Professor
Department of CSE (Data Science)

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



Prof. Bhagyalaxmi S Banakar
Assistant Professor
Department of CSE (Data Science)

FDPs Attended

1. Faculty Development Program on "Cyber Security Using AI", conducted under the EICTA Consortium, from 23 March 2026 to 3 April 2026.