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DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

CALENDAR YEAR 2025

Journal Publications

1. Muthusamy, R., & Charles, Y. R. (2025). High-precision malware detection in Android apps using quantum explainable hierarchical interaction network. Knowledge-Based Systems, 310, 112916. https://doi.org/10.1016/j.knosys.2024.112916.
2. Usharani, C., & Selvapandian, A. (2025). FedLRes: Enhancing lung cancer detection using federated learning with convolution neural network (ResNet50). Neural Computing and Applications. https://doi.org/10.1007/s00521-025-11006-x.
3. Karpagavalli, C., & Kaliappan, M. (2025). Edge implicit weighting with graph transformers for robust intrusion detection in Internet of Things network. Computers & Security, 150, 104299. https://doi.org/10.1016/j.cose.2024.104299.
4. Kaliappan, M., Mariappan, E., Ramnath, M., Karpagavalli, C., Hepzibah, A. R., & Vimal, S. (2025). Predictive analysis on demonetization data using support vector machine technique. Journal of Theoretical and Applied Information Technology, 103(1), 317–327.
5. Balachandran, G. B., Ramachandran, M. E., Thangaraj, H., & Alexander, A. B. (2025). From carbon inspiration to energy innovation: Epoxy nano-composites for thermal and dielectric excellence. International Journal of Polymer Analysis and Characterization, 30(4), 377–392. https://doi.org/10.1080/1023666X.2025.2466582.
6. Karuppasamy, C., Senthil Kumar, C., Ganesan, R., & Elamparithi, P. (2025). Optimizing PID control for maximum power point tracking in photovoltaic systems under variable and partial shading conditions. Renewable Energy, 246, 122930. https://doi.org/10.1016/j.renene.2025.122930.
7. Vaissnave, V., Birunda, S. S., Dharani, V., Lalitha, R., & Muthamil Sudar, K. (2025). An optimised deep learning model with an atrous convolutional-based inception system

for sentiment analysis of customer online reviews. Journal of Engineering Design. https://doi.org/10.1080/09544828.2025.2475426.

8. Edwin Raja, S., Sutha, J., Elamparithi, P., Jaya Deepthi, K., & Lalitha, S. D. (2025). Liver tumor prediction using attention-guided convolutional neural networks and genomic feature analysis. MethodsX, 14, 103276. https://doi.org/10.1016/j.mex.2025.103276.
9. Balachandran, G. B., Muthu Eshwaran, R., Palpandian, M., & David, P. W. (2025). Experimental optimization of stacked solar PV panels: Strategic positioning and reduced footprint for power maximization. Renewable Energy, 248, 123099. https://doi.org/10.1016/j.renene.2025.123099.
10. Revathi, B., Kaliappan, M., Mariappan, E., & Kezial Elizabeth, S. K. (2025). Analysis of acute lymphoblastic leukemia classification with machine and deep learning techniques. Journal of Theoretical and Applied Information Technology, 103(5), 2029–2035.
11. Mangayarkarasi, P., Raghavan, S., Kaliappan, M., Sivarathinabala, M., Rajangam, B., & Alagarsamy, M. (2025). Decentralised edge intelligence for low-latency applications in IoT wireless networks. Journal of Environmental Protection and Ecology, 26(1), 350–359.
12. Balachandran, G. B., Muthu Eshwaran, R., Thangaraj, H., & Murugesan, P. (2025). Unleashing the future of wind energy systems using SiO_2 and TiO_2 based insulation: A deep dive into artificial intelligence and response surface methodology. Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science. https://doi.org/10.1177/09544062251327806.
13. Ravindran, S., Balachandran, G. B., Muthuraman, D., & Muthu Eshwaran, R. (2025). Automobile safety innovations and road crash trends: A data-driven analytical approach. Proceedings of the Institution of Mechanical Engineers, Part D: Journal of Automobile Engineering. https://doi.org/10.1177/09544070251329661.
14. Premalatha, S., Sunitha, D., Manojkumar, B., Kavitha, G., & Alagarsamy, M. (2025). Point-wise activations and steerable convolutional networks for DDoS-attack detection in cyber-physical systems over 5G networks. Internet Technology Letters, 8(3)*, e70026. https://doi.org/10.1002/itl2.70026.
15. Prakash, G. B., Siva, T., Shunmugasundaram, S., Mariappan, E., Lakshmi, A. A., & Muthusamy, R. (2025). Next-gen security: Leveraging DNA cryptography for robust

encryption. Journal of Theoretical and Applied Information Technology, 103(10)*, 4090–4091.

16. Porchelvi, N., Elamparithi, P., Prabakaran, P., Iyengar, S. P., Ramasamy, D., & Arunkumar, U. (2025). Energy-efficient offloading task in the 5G edge-cloud continuum using probabilistic spiking networks with tactical unit optimization. Internet Technology Letters, 8(4)*, e70073. https://doi.org/10.1002/itl2.70073.
17. Guruprakash, B., Rajalakshmi, J., Angel Hepzibah, R., Salma, N., Mariappan, E., & Ramnath, M. (2025). Secure broadcast communication in sensor networks: Fortifying the KD authentication protocol. Journal of Theoretical and Applied Information Technology, 103(12)*, 5268–5269.
18. Selva Birunda, S., Subramani, H., Arunkumar, U., & Sheheryar, T. (2025). Machine learning-enhanced terahertz biosensor with MXene-graphene conjugate for high-sensitivity malaria detection. Plasmonics. https://doi.org/10.1007/s11468-025-03152-8.
19. Vithyalakshmi, N., Elamparithi, P., Dhivya, R., & Prabhu, S. G. (2025). Polarization insensitive terahertz surface plasmon resonance biosensor for brain tumor detection with extra trees regressor for behavior prediction. Plasmonics. https://doi.org/10.1007/s11468-025-03151-9.
20. Ashok, K., Sasikala, D., Vetrivel, P., Prathap Kumar, K. P., Deepa, K., Alagarsamy, M., Philip, J. M., & Rajaram, A. (2025). Fuzzy decision support system in real-time for biomedical Internet of Things management in healthcare environments. Journal of Environmental Protection and Ecology, 26(4)*, 1549–1559.
21. Kanchana, D., Attarde, V. B., Shanmugapriya, P., Murugesan, R. R., Anbalagan, K., Mohamed Faizal, M. K., Philip, J. M., & Rajaram, A. (2025). Investigating the accuracy of machine learning for predicting spinal compression fractures in osteoporosis using DXA data. Journal of Environmental Protection and Ecology, 26(4)*, 1516–1525.
22. Arif Mohamed Khan, R., Muniyandy, E., Kavitha, G., Rajeswari, P., Ramya, M., & Kant, V. (2025). Development of a novel machine learning model for accurate classification of forest fire scenarios. International Journal of Basic and Applied Sciences, 14(Special Issue 1)*, 203–210.
23. Tripathy, J., Kaliappan, M., Relin Francis, Shanmugasundaram, R., Alagarsamy, M., Patricia Nancy, S., & Algahtani, A. (2025). Integrating blockchain and IoT with advanced predictive modeling for energy efficient urban transportation systems.

Sustainable Computing: Informatics and Systems, 48, 101208. https://doi.org/10.1016/j.suscom.2025.101208.

24. Muthu Eshwaran, R., Balachandran, G. B., Velladurai, P., & Rajakumar, A. (2025). Deep learning for solar PV fault classification using RGB imaging and comparison of preprocessing techniques. Solar Energy, 301, 113959. https://doi.org/10.1016/j.solener.2025.113959.
25. Ravindran, S., Balachandran, G. B., Murugesan, P., & Muthu Eshwaran, R. (2026). Applied thermal enhancement in solar desalination: A hybrid PV/T system with fan and scraper assist. Applied Thermal Engineering, 282, 128861. https://doi.org/10.1016/j.applthermaleng.2025.128861.
26. Selva Birunda, S., Nagarajan, S. K., Rangaswamy, K. D., & Muthiah, M. (2025). A hybrid framework for fake news detection using explainability of artificial intelligence. Recent Patents on Engineering.
27. Selva Birunda, S., Kaliappan, M., & Ramana, R. (2025). An explainable modified convolutional mixer neural network-based deep learning framework for accurate brain tumor detection and classification. Neurological Research. https://doi.org/10.1080/01616412.2025.2574357.
28. Senthamizh Selvi, R. S., Rajeshwari, R. M., Wekalao, J., & Rajakannu, A. (2025). Advanced MXene-gold hybrid plasmonic biosensor for early detection of tuberculosis biomarkers with machine learning optimization. Plasmonics. https://doi.org/10.1007/s11468-025-03178-y.
29. Balachandran, G. B., Muthu Eshwaran, R., David, P. W., & Velladurai, P. (2025). Series vs. parallel connections in BIPV arrays: A performance-based assessment under different irradiance scenarios. Proceedings of the Institution of Mechanical Engineers, Part A: Journal of Power and Energy.

Conference Publications

1. Gurupatham, T. G., Charles, Y., & Muthusamy, R. (2025). Revolutionizing agricultural supply chain management with blockchain-based IoT: Improving traceability, efficiency and sustainability. In AIP Conference Proceedings (Vol. **3237**, Article **060038**). https://doi.org/10.1063/5.0248682

2. Anushkannan, N. K., Karpagavalli, C., Jagadesan, A., Kavya, R. V., Geetha, K., & Devi, S. R. (2025). Dual-channel convolutional neural network with attention pooling and sand cat swarm optimization for incremental land-cover classification in satellite image patches. In Proceedings of the 4th International Conference on Sentiment Analysis and Deep Learning (ICSADL 2025) (pp. **751–758**). https://doi.org/10.1109/ICSADL65848.2025.10933491

3. Devi, K. S., Contractor, D., Deepa, V., Lakshmi, T. K., Santhikala, M., & Mounika, K. (2025). Energy consumption optimization using big data analytics for smart grid management. In Proceedings of the 5th International Conference on Emerging Systems and Intelligent Computing (ESIC 2025) (pp. **266–271**). https://doi.org/10.1109/ESIC64052.2025.10962607.

4. Amuthachenthiru, K., & Kaliappan, M. (2025). Advancements in digital pathology: A comprehensive survey of predictive models for cancer diagnosis. In Lecture Notes in Networks and Systems (Vol. **1292**, pp. **517–533**). https://doi.org/10.1007/978-981-96-3250-3_40.

5. Lokesh Raju, V., Sivaneasan, B., Shaik, A., Chakrabarti, P., & Vimal, S. (2025). Blockchain-enhanced secure data management for Internet of Vehicles (IoV) networks. In Lecture Notes in Networks and Systems (Vol. **1356**, pp. **295–303**). https://doi.org/10.1007/978-981-96-5238-9_26.

6. Ramathilagam, A., Vignesh Abranantham, T., Nova, S., & Elamparithi, P. (2025). AI-driven conversational agent for enhancing government schemes. In Proceedings of the International Conference on Computational Innovations and Engineering Sustainability (ICCIES 2025). https://doi.org/10.1109/ICCIES63851.2025.11033042.

7. Ramana, R., Kumar Reddy, C. V. P., Beaulah Jeyavathana, R., Vamsi Krishna, C., Karunanithi, V., & Jegajothi, B. (2025). AI-driven threat intelligence using graph neural networks for advanced cybersecurity defense. In Proceedings of the 8th International Conference on Computing Methodologies and Communication (ICCMC 2025) (pp. **752–758**). https://doi.org/10.1109/ICCMC65190.2025.11140595.

8. Senthilpandi, S., Elamparithi, P., Mounika Naga Bhavani, M., & Karthick, R. (2025). BERT and RoBERTa model based approach for text to diseases classification. In Proceedings of the International Conference on Emerging Trends in Industry 4.0 Technologies (ICETI4T 2025). https://doi.org/10.1109/ICETI4T63625.2025.11132263.

9. A. Ramathilagam, S. Pradeepha, M. Preethi Ram, B. Sankara Lakshmi, S. Arun Kumar, & D. David Neels Ponkumar. (2024). A method for predicting coronary heart disease using machine learning approaches. In Proceedings of the 2024 2nd International Conference on Recent Trends in Microelectronics, Automation, Computing and Communications Systems (ICMACC). https://doi.org/10.1109/ICMACC62921.2024.1089463.

Book Chapters

1. Jothi Lakshmi, S. (2025). Time series analysis using LSTM networks and its application to financial forecasting. In *Artificial Intelligence for Financial Risk Management and Analysis* (pp. 19–57). https://doi.org/10.4018/979-8-3373-1200-2.ch002

2. Sutha, J., Kavitha, G., Malathi, P., & Prabhu, R. (2025). AI-driven advancements in hybrid imaging for nuclear medicine. In *AI Insights on Nuclear Medicine* (pp. 247–270). https://doi.org/10.4018/979-8-3373-1275-0.ch012

3. Dhinakaran, D., Raja, S. E., Ramathilagam, A., Jasmine, J. J., & Logapriya, V. (2025). AI-driven preclinical advances in nuclear medicine radiopharmaceutical therapy for prostate cancer. In *AI Insights on Nuclear Medicine* (pp. 203–229). https://doi.org/10.4018/979-8-3373-1275-0.ch010