Faculty Profile



Dr. P. SUNDARAVADIVEL, M.E., Ph.D
Professor / AIML

HIGHLIGHTS:

- Number of Journal Publications: 57
- Number of Conference Publications: 17
- H-Index: 9
- Project Funding Received: NIL
- Patents Published: 2
- Patents Granted: NIL

PROFESSIONAL LINKS:

- Scopus ID: 57204391586
- Scopus Link: https://www.scopus.com/authid/detail.uri?authorId=57204391586
- Google Scholar ID: https://scholar.google.com/citations?user=KxEBnc4AAAAJ&hl=en
- ORCID: https://orcid.org/0000-0003-1115-9490
- Anna University Faculty ID: 2686991982
- AICTE Faculty ID: 1-3552774428
- Anna University Supervisor ID: NIL
- LinkedIn: NIL

PROFESSIONAL BACKGROUND:

- Teaching Experience till date: 20 Years
- Industrial Experience: NIL

AREA OF SPECIALIZATION:

- Data Mining
- Wireless Network
- Antenna and Communication System

PATENTS PUBLISHED/GRANTED:

1. "Multi-Layered Cybersecurity Framework Using Machine Learning Algorithms", Application No. 202441027153 A, Published on 12.04.2024, Patent Application Publication, India.
2. "Generative Adversarial Network (GAN)-Based Synthetic Data Generation for Privacy Preserving Machine Learning", Application No. 202441056350 A, Published on 02.08.2024, Patent Application Publication, India.

COURSES CERTIFIED:

- **CCNA**

PUBLICATION:

- **P. Sundaravadivel**, G. Abinaya, "ACXNet++: An attention augmented hybrid deep learning framework for cross task mental workload estimation from EEG neural manifolds", Discover Artificial Intelligence, Springer Nature, Vol. 6, 2026. DOI: 10.1007/s44163-026-02154-7
- **P. Sundaravadivel**, U. Kumaran, E. S. Vinoth Kumar, T. Aravind, "Adaptive multimodal large language model with hierarchical cross modal grounding for real time industrial visual anomaly detection on edge devices", Discover Artificial Intelligence, Springer Nature, Vol. 6, 2026. DOI: 10.1007/s44163-026-02008-2
- **P. Sundaravadivel**, R. Augustian Isaac, U. Kumaran, G. Priyanga, "Lightweight multimodal large language model enabling efficient one shot industrial visual anomaly detection", Discover Artificial Intelligence, Springer Nature, Vol. 6, 2026. DOI: 10.1007/s44163-026-01252-w
- Preksha Kamalesh Babu, Navyashree S P, Sudeepa Roy Dey, Deepa Suryaprasad, Rita Christopher, **P. Sundaravadivel**, "The AgeWell Index: An RF-Seeded Adaptive Genetic Algorithm for Explainable Aging Assessment in Mid-Life Adults", International Conference on Intelligent and Innovative Technologies in Computing, Electrical and Electronics (IITCEE), IEEE, 2026, pp. 1–7. DOI: 10.1109/IITCEE67948.2026.11394091
- S. Fennila James, S. Mercy Gnana Gandhi, R. Augustian Isaac, **P. Sundaravadivel**, "Harnessing Artificial Intelligence and Machine Learning in English Language Teaching: Trends and Applications", Lecture Notes in Networks and Systems, Springer, 2025, pp. 163–180. DOI: 10.1007/978-981-95-0629-3_13
- E. S. Vinoth Kumar, R. Augustian Isaac, **P. Sundaravadivel**, P. Janaki Ramal, "Machine learning-driven development of a behaviour-based student classification system (SCS-B) for enhanced educational analytics", Scientific Reports, Vol. 15, Article 37428, October 2025. ISSN: 2045-2322. DOI: 10.1038/s41598-025-21332-8
- B. Mohan, S. Mahalakshmi, P. Vigneshwaran, CH. V. B. Vasanth, J. Relin Francis Raj, **P. Sundaravadivel**, "Dual Authentication Arduino-Based Door Lock System with Light Detection and Keypad Authentication", International Conference on Integration of Computational Intelligent System (ICICIS), IEEE, 2025, pp. 1–6. DOI: 10.1109/ICICIS65613.2025.11371165
- U. V. Anbazhagu, A. Alice Blessie, R. Santhana Krishnan, G. Yamini, J. Relin Francis Raj, **P. Sundaravadivel**, "A Smart IoT-Enabled Wildfire Monitoring and Early Detection System using Convolutional Neural Networks and Sensor Data Analysis", 5th International Conference on Trends in Material Science and Inventive Materials (ICTMIM), IEEE, 2025, pp. 1379–1386. DOI: 10.1109/ICTMIM65579.2025.10988124
- B. Mohan, S. Mahalakshmi, R. Prem Ananth, J. Relin Francis Raj, R. Santhana Krishnan, **P. Sundaravadivel**, D. Sarathkumar, "IoT Enabled Smart Metering for Domestic Electrical Distribution System Using Arduino", International Conference on Device Intelligence, Computing and Communication Technologies (DICCT), IEEE, 2025, pp. 45–51. DOI: 10.1109/DICCT64131.2025.10986453
- R. Augustian Isaac, **P. Sundaravadivel**, V. S. Nici Marx, G. Priyanga, "Enhanced novelty approaches for resource allocation model for multi-cloud environment in vehicular Ad-Hoc networks", Scientific Reports, Vol. 15, Article 9472, March 2025. ISSN: 2045-2322. DOI: 10.1038/s41598-025-93365-y
- R. Arul Jose, P. Ebby Darney, R. Santhana Krishnan, J. Relin Francis Raj, D. Jansi Rani, **P. Sundaravadivel**, "A Hybrid Deep Learning Model for Optimizing Electric Vehicle Battery and

Navigation Systems", International Conference on Machine Learning and Autonomous Systems (ICMLAS), IEEE, 2025, pp. 308–315. DOI: 10.1109/ICMLAS64557.2025.10968839

- X. Arogya Presskila, J. Relin Francis Raj, P. Selva Kumar, G. Ram Sankar, G. Vinoth Rajkumar, **P. Sundaravadivel**, "A Hybrid Learning-Based Q-Commerce Framework Evolving from E-Commerce", International Conference on Machine Learning and Autonomous Systems (ICMLAS), IEEE, 2025, pp. 295–302. DOI: 10.1109/ICMLAS64557.2025.10968475
- M. Saravana Karthikeyan, Ponnusamy Subramani, M. Panneer Selvam, M. L. Sworna Kokila, R. Vijayalakshmi, **P. Sundaravadivel**, "Deep Learning-Powered Edge Analytics for IoT-based Sensor Networks", International Conference on Machine Learning and Autonomous Systems (ICMLAS), IEEE, 2025, pp. 453–460. DOI: 10.1109/ICMLAS64557.2025.10967980
- E. D. Kanmani Ruby, T. Sathiyapriya, **P. Sundaravadivel**, D. Rajesh Kumar, Om Prakash Kumar, Shweta Vincent, Pallavi R. Mane, "Compact circularly polarized dual band antenna with modified patch for ISM and V2X communication systems", Scientific Reports, Vol. 15, Article 5885, February 2025. ISSN: 2045-2322. DOI: 10.1038/s41598-025-89937-7
- T. S. Akhila, J. Relin Francis Raj, D. Kani Jesintha, R. Santhana Krishnan, V. Vinoth Kumar, **P. Sundaravadivel**, "Hybrid Deep Learning for International Trading: Integrating LSTM and Transformer Models", International Conference on Sentiment Analysis and Deep Learning (ICSADL), IEEE, 2025, pp. 1172–1179. DOI: 10.1109/ICSADL65848.2025.10933130
- S. Naveen, R. Dhamotharan, S. Sahebzathi, R. Santhana Krishnan, V. Vinoth Kumar, **P. Sundaravadivel**, "ElephantGuardNet: A Comprehensive Solution for Elephant Conservation and Human-Elephant Conflict Reduction", International Conference on Sentiment Analysis and Deep Learning (ICSADL), IEEE, 2025, pp. 1470–1477. DOI: 10.1109/ICSADL65848.2025.10933013
- M. Saravana Karthikeyan, S. Vijay Shankar, R. Santhana Krishnan, M. Sornavalli, J. Relin Francis Raj, **P. Sundaravadivel**, "Adaptive Movie Recommendations: A Deep Learning Framework with Mood and Sentiment Integration", International Conference on Sustainable Communication Networks and Application (ICSCNA), IEEE, December 2024, pp. 937–944. DOI: 10.1109/ICSCNA63714.2024.10863850
- **P. Sundaravadivel**, D. Rajesh Kumar, Yuvaraj Padmanaban & Om Prakash Kumar, "A versatile conformal circularly polarized quad-element antenna for X-band applications", SCI, SCOPUS, WOS, UGC, AU ANNEXURE, Scientific Reports, Vol. 14, Article 27721, 2024. ISSN: 2045-2322. DOI: 10.1038/s41598-024-79197-2
- T. S. Akhila, X. Arogya Presskila, P. Kalyanakumar, R. Santhana Krishnan, M. SahanaPreethi, **P. Sundaravadivel**, "Optimizing the Shopping Experience Through Smart Trolleys with Integrated Deep Learning Techniques", 4th International Conference on Sustainable Expert Systems (ICSES), SCOPUS, IEEE Xplore, October 2024, pp. 1885–1892. DOI: 10.1109/ICSES63445.2024.10763335
- **P. Sundaravadivel**, J. Relin Francis Raj, S. Senthil Kumar, R. Santhana Krishnan, A. Essaki Muthu, M. Saravana Karthikeyan, "Dynamic Playlist Recommendations based on Multi-Modal Mood Detection and Contextual Learning", 8th International Conference on I-SMAC (IoT in Social, Mobile, Analytics and Cloud), SCOPUS, IEEE, 2024, pp. 875–881. ISBN: 979-8-3503-7642-5. DOI: 10.1109/I-SMAC61858.2024.10714756
- **P. Sundaravadivel**, M. Ramkumar Raja, C. Annadurai & D. Rajesh Kumar, "A novel moon-shaped flexible four-element co-planar antenna for 5G applications", SCI, SCOPUS, WOS, UGC, AU ANNEXURE, Optical and Quantum Electronics, Vol. 56, Issue 10, 2024. ISSN: 0306-8919. DOI: 10.1007/s11082-024-07326-2
- **P. Sundaravadivel**, D. Rajesh Kumar, V. Prithivirajan and K. Anish Pon Yamini, "A four-element metasurface loaded high gain MIMO antenna for X-band applications", Physica Scripta, IOP Publishing, Vol. 99, No. 9, 095530, 2024. DOI: 10.1088/1402-4896/ad6d10

- P. Hemavathy, M. Sangeetha Priya, **P. Sundaravadivel**, E. S. Vinothkumar & K. Suresh Kumar, "Harnessing AI Mining Methodologies to Anticipate the Probability of Gestational Diabetes Mellitus Occurrence", SCI, SCOPUS, WOS, UGC, AU ANNEXURE, Lecture Notes in Networks and Systems, Springer, 2024, pp. 295–303. ISSN: 2367-3370. DOI: 10.1007/978-981-97-3991-2_25
- P. Hemavathy, Haitham Alhaji, D. Yuvaraj, **P. Sundaravadivel**, Saif Saad Alnuaimi, R. Augustian Isaac, "CNN based Smart Activity Recognition for Elderly and Physically Disabled", Journal of Electrical Systems, 2024, Vol. 23, Issue 3s. DOI: 10.52783/jes.1284
- P. Senthilpandian, **P. Sundaravadivel**, R. Augustian Isaac, P. Hemavathy, E. S. Vinothkumar, P. Janaki Ramal, "Analysing IoT Smart System Application and Environment by Using Simulated Annealing Techniques", Journal of Theoretical and Applied Information Technology, Vol. 102, Issue 8.
- E. S. Vinothkumar, P. Hemavathy, Najeem Dheen Abdul Majeeth, V. Ramachandran, **P. Sundaravadivel**, R. Augustian Isaac, "Classification of Glaucoma Image Using Supervised Classifiers and Segmentation of Blood Vessel", International Journal of Intelligent Systems and Applications in Engineering (IJISAE), Vol. 12, Issue 3, pp. 499–507.
- R. Augustian Isaac, **P. Sundaravadivel**, D. Yuvaraj, P. Hemavathy, P. Janaki Ramal, P. Sankar, "Design of Domestic Plants Leaves Disease Detection Using Deep Learning", International Journal of Intelligent Systems and Applications in Engineering (IJISAE), Vol. 12, Issue 20, pp. 755–764.
- P. Senthil Pandian, **P. Sundaravadivel**, E. S. Vinothkumar, P. Janaki Ramal, "Monitoring the Sequence Recovery in Bitcoin Using Convolutional Neural Network and Long Short-Term Model to Hybrid Model", International Journal of Intelligent Systems and Applications in Engineering (IJISAE), Vol. 12, Issue 20, pp. 765–772.
- **P. Sundaravadivel**, B. Karthika, Y. Harold Robinson, R. Santhana Krishnan, L. Rachel, S. Sundararajan, "An Intelligent IoT-Driven Smart Shopping Cart with Reinforcement Learning for Optimized Store Navigation", International Conference on Emerging Research in Computational Science (ICERCS), IEEE, 2023, pp. 1–6. DOI: 10.1109/ICERCS57948.2023.10434265
- **P. SundaraVadivel**, R. Augustian Isaac, P. Senthil Pandian, D. Rajesh Kumar, "A Very Compact and Highly Decoupled Four Element Antenna for n79 Band Application", International Journal of Microwave and Optical Technology, Vol. 19, No. 1, 2024, pp. 99–108.
- Alnuaimi, S. S., Rasheed, B. H., Yuvaraj, D., **Sundaravadivel, P.** & Isaac, R. A. (2024), "Hybrid Deep Learning Techniques for Large-Scale Video Classification", International Journal of Intelligent Systems and Applications in Engineering, 12(15s), 78–86. https://ijisae.org/index.php/IJISAE/article/view/4717
- Vallileka, N., **Sundaravadivel, P.**, Karthikeyan, U., Santhana Krishnan, R., Narayanan, K.L., Sundararajan, S., "DeepTweet: Leveraging Transformer-based Models for Enhanced Fake News Detection in Twitter Sentiment Analysis", 7th International Conference on I-SMAC (IoT in Social, Mobile, Analytics and Cloud), I-SMAC 2023 – Proceedings, 2023, pp. 438–443. DOI: 10.1109/I-SMAC58438.2023.10290217
- S. Navaneetha Krishnan, **P. Sundaravadivel**, D. Yuvaraj, "Enhanced Route Optimization for Wireless Networks using Meta-Heuristic Engineering", Computer Systems Science and Engineering, Tech Science Press, Vol. 43, No. 1, 2022, pp. 17–26. DOI: 10.32604/csse.2022.021590
- D. Yuvaraj, S. Shanmugapriya, Subbiah Swaminathan, **P. Sundaravadivel**, "Prioritization of Medical Data Transmission over IoT Environment", International Conference on Computer Science and Software Engineering (CSASE), IEEE, 2022, pp. 306–311. DOI: 10.1109/CSASE51777.2022.9759820

- D. Yuvaraj, S. Shanmugapriya, **P. Sundaravadivel**, "Secure Key Management Based Mobile Authentication in Cloud", Computer Systems Science and Engineering, Tech Science Press, Vol. 43, No. 3, 2022, pp. 887–896. DOI: 10.32604/csse.2022.021845
- S. Nageswari, **Dr. P. Sundaravadivel**, "IoT Based Automatic Dual Axis Sun Tracking and Intimation System", International Journal of Emerging Technology and Innovative Engineering, Vol. 5, Issue 4, April 2019.
- **P. Sundaravadivel**, D. Yuvaraj, Dr. M. Sivaram, S. Nithya, "Intelligent based IoT Smart City on Traffic Control System Using Raspberry Pi and Robust Waste Management", Journal of Advanced Research in Dynamical & Control Systems, Vol. 10, 14-Special Issue, 2018, pp. 765–770.
- **P. Sundaravadivel**, S. Navaneetha Krishnan, D. Yuvaraj, "An Efficient CBIR System Based on Colour Histogram, Edge and Texture Features", Concurrency and Computation: Practice and Experience, Wiley, Vol. 31, Issue 12, 2019 (online 2018). DOI: 10.1002/cpe.4994
- **P. Sundaravadivel**, S. Navaneetha Krishnan, D. Yuvaraj, "An Effective Document Category Prediction System Using Support Vector Machines, Mann-Whitney Techniques", International Journal of Pure and Applied Mathematics, Vol. 118, No. 22, 2018, pp. 895–900. ISSN: 1314-3395.
- **P. Sundaravadivel** & S. Senthamaraikannan, "Effective feature reduction for health care data set using hybridized feature selector", Asian Journal of Research in Social Science and Humanities, Online ISSN 2249-7315, Vol. 6, No. 5, 2016, pp. 443–457. DOI: 10.5958/2249-7315.2016.00128.3
- **P. Sundaravadivel**, S. Senthamaraikannan & B. Divagar, "High performance multicast turing machine", International Journal of Applied Engineering Research, ISSN 0973-4562, Research India Publications, Vol. 10, No. 55, 2015.
- T. Kiruthika, **P. Sundaravadivel**, "A Comparative Analysis of Reversible Data Hiding in H.264/AVC and H.265/HEVC Video Streams", i-manager's Journal on Communication Engineering and Systems, Vol. 3, No. 3, 2014. DOI: 10.26634/jcs.3.3.3179
- S. Senthamarai Kannan, Sherin Mariam John, **P. Sundaravadivel** & S. Ilangovan, "Performance evaluation of classification algorithms C4.5 and SMO on microarray gene-set data", International Journal of Research in Engineering and Technology (IJRET).
- **P. Sundaravadivel**, J. Senthilkumar & M. Sudharsanan, "Cluster-based intrusion detection technique for wireless networks", International Journal on Recent and Innovation Trends in Computing and Communication, ISSN: 2321-8169, Vol. 2, No. 1, pp. 80–87.

CONFERENCES/SEMINARS/WORKSHOPS ATTENDED:

- **Dynamic Playlist Recommendations Based on Multi-Modal Mood Detection and Contextual Learning**, 8th International Conference on I-SMAC (IoT in Social, Mobile, Analytics and Cloud), 5 October 2024.
- **Optimizing the Shopping Experience through Smart Trolleys with Integrated Deep Learning Techniques**, International Conference at Pokhara University, 15 October 2024.
- **Adaptive Movie Recommendations: A Deep Learning Framework with Mood and Sentiment Integration**, International Conference at Bharath Niketan Engineering College, 11 December 2024.
- **'Empirical study on feature subset selection and feature ranking methods'**, First International Conference on Science Engineering and Computer Technology, Vedavyasa Institute of Technology, Calicut, Kerala.
- **'High performance multicast turing machine'**, ICAAET'15 International Conference on Advances in Applied Engineering and Technology – 2015, organized by Syed Ammal Engineering College, May 14–16, 2015.

- **'A novel document category prediction system using support vector machines and Mann-Whitney rank sum statistic'**, International Conference on Recent Advances in Engineering, Science & Technology – ICON'15, April 17, 2015, organized by Department of Biomedical Engineering, Noorul Islam Centre for Higher Education, Kumaracoil.
- **Duplicate Elimination in Web Databases by Active Learning Approach**, PSRC 2013 International Conference Program, Kuala Lumpur, August 25–26, 2013, organized by Planetary Scientific Research Centre (PSRC).
- **Performance Evaluation of Classification Algorithms C4.5 and SMO on Microarray Gene-set Data**, PSRC 2012 International Conference Program, Pattaya (Thailand), July 20–21, 2013, organized by Planetary Scientific Research Centre (PSRC).
- **A Novel Information Gain-Bayes Theorem Based Hybrid Feature Selection Approach for Improved Classifier Accuracy**, 2nd National Conference on Frontiers in Applied Sciences and Computer Technology (FACT'13), May 23–24, 2013, organized by National Institute of Technology, Tiruchirappalli.
- **Intrusion Detection using Multi Sensing Techniques in Wireless Sensor Networks**, National Conference on Emerging Trends in Computing and Network Technologies (ECNT 09), March 19–20, 2009, organized by K.L.N College of Information and Technology, Madurai.
- **Intrusion Detection using Multi Sensing Techniques in Homogeneous and Heterogeneous Wireless Sensor Networks**, 2nd National Conference on Intelligent Computing and Automation (INSTRUVISION 2009), March 13, 2009, organized by Kamaraj College of Engineering and Technology, Virudhunagar.
- **Intrusion Detection using Multi Sensing Techniques in Wireless Sensor Networks**, National Conference on Information, Communication and Electrical Technologies (ICET 2009), February 27–28, 2009, organized by Velammal College of Engineering and Technology, Madurai.
- **National Seminar on Emerging Trends in Computer Applications**, Bharath Niketan Engineering College, Aundipatti, February 08, 2013.
- **National Conference on Computing and Communication**, Dr. Mahalingam College of Engineering and Technology, Pollachi, September 15–16, 2006.
- **Faculty Development Program**, Bharath Niketan Engineering College, Aundipatti, organized by National Institute of Technical Teachers Training and Research Institute, Chennai, August 2008.
- **Implant Training as a Programmer Trainee** by National Institute of Technical Teachers Training and Research Institute, Chennai, June–August 2004.
- **Participated in the Seminar on Intellectual Property Rights and Copyrights**, organized by Technology Gateway, Anna University, Chennai.
- **Participated in 7 Days NSS Programme Officer Orientation Programme** at Avinashilingam University, Coimbatore, from 14.02.2014 to 20.02.2014.