

Arun Pandian J

✉ Email : arunpandian.j@vit.ac.in

Research Interests:

Computer Vision
Deep Reinforcement Learning
Precision Agriculture and Healthcare
AI Infrastructure and Operations

Research Metrics:

Citations : 1622
h-index: 10 i10-index: 11
Google Scholar : [Lt94FW0AAAAJ](https://scholar.google.com/citations?user=Lt94FW0AAAAJ)
Scopus : [56398419000](https://orcid.org/56398419000)
ORCID : [0000-0001-8177-3096](https://orcid.org/0000-0001-8177-3096)

Professional Experience

Vellore Institute of Technology (VIT), Vellore, India

Assistant Professor Senior Grade-I

School of Computer Science Engineering and Information Systems

Dec 2022 – Present

Key Contributions:

- Faculty In-charge, Machine Learning Lab with NVIDIA GPU-powered Workstations.
- Faculty Coordinator, Career Development Cell.
- Member, Curriculum Revision Committee for B. Tech, B. Sc., and BCA programs.
- Designed and developed syllabi for Artificial Intelligence, Machine Learning, Data Science, Generative AI, and Reinforcement Learning.
- Delivered 22+ NVIDIA workshops on *the Fundamentals of Deep Learning*.

**Vel Tech Rangarajan Dr. Sagunthala R&D Institute of Science and Technology,
Chennai, India**

Associate Professor (January 2022 – November 2022)

Assistant Professor (December 2019 – December 2021)

Department of Computer Science and Engineering

Key Contributions:

- Faculty In-charge, NVIDIA AI Lab; administered NVIDIA DGX-1 server for AI research and academia.
- Trained over 200 faculty and students on multi-GPU deep learning, container management, and networking.
- Delivered 25+ NVIDIA DLI instructor-led workshops on *the Fundamentals of Deep Learning*.
- Member, Curriculum and Syllabus Revision Committee for B.Tech (CSE, AI&ML, AI&DS) and M.Sc. (Data Analytics).
- Led certification courses and webinars for students and startups.
- Mentored and reviewed start-up projects under the Vel Tech NIDHI PRAYAS initiative.

M.A.M. College of Engineering and Technology, Tiruchirappalli, India

Assistant Professor

Department of Computer Science and Engineering

Dec 2016 – Nov 2019

Key Contributions:

- Member, Leadingindia.ai project (Bennett University, Greater Noida, India) from May 2018 to November 2019.

- Sabbatical Faculty at Bennett University, AI & Deep Learning Lab (NVIDIA DGX-powered).
- Instructor, Infosys Campus Connect (FP 5.0 – Python Programming), March 2017 – December 2017.
- Faculty Coordinator, Yuva Student Club (December 2016 – May 2018).
- Web Developer/Admin for mamcet.com, mambs.com, and mamsa.com (December 2016 – June 2018).

CARE Group of Institutions, Tiruchirappalli, India

Assistant Professor

Department of Computer Science and Engineering

Feb 2016 – Nov 2016

Key Contributions:

- Web Developer/Admin for **care.ac.in** (March 2016 – November 2016).

Education:

Ph.D. in Information and Communication Engineering

Anna University, Chennai, India

Awarded: January 2021

M.E. in Mobile and Pervasive Computing

University College of Engineering, BIT Campus, Anna University, Tiruchirappalli, India

Completed: June 2015 | **CGPA:** 7.79

B.Tech. in Information Technology

Arunai Engineering College, Tiruvannamalai, India

Completed: April 2013 | **CGPA:** 6.80

Patents (India):

1. **Reinforcement Learning-Based Adaptive Balance Assistance Device for Standard Bicycles**
Application No.: 202541071622 | *Date Filed:* 28 July 2025 | *Status:* Published
2. **A Reinforcement Learning-Enhanced Prosthetic Limb System for Adaptive Gait Optimization**
Application No.: 202541067011 | *Date Filed:* 14 July 2025 | *Status:* Published
3. **A Handheld Device and Method for Health-Related Risk Analysis of Polycystic Ovary Syndrome (PCOS)**
Application No.: 202541066860 | *Date Filed:* 14 July 2025 | *Status:* Published
4. **A Smart Joystick Controller System**
Application No.: 202541066449 | *Date Filed:* 11 July 2025 | *Status:* Published
5. **Reinforcement Learning-Based Autonomous Water Management System**
Application No.: 202541051273 | *Date Filed:* 28 May 2025 | *Status:* Published
6. **Quantum-Enhanced Transformer-Based Adaptive Lane Detection System**
Application No.: 202541051270 | *Date Filed:* 28 May 2025 | *Status:* Published

Journal Publications (Scopus Indexed):

1. **Enhancing Lane Detection in Autonomous Vehicles with Multi-Armed Bandit Ensemble Learning**
Scientific Reports, Vol. 15, Issue 1, 2025.

2. **A Container-Based Cloud Broker for Effective Service Provisioning in Multicloud Environment**
International Journal of Intelligent Systems, Vol. 2025, Issue 1, 2025.
3. **Fractal Dimension Analysis for Improved Decision-Making in Non-Stationary Multi-Arm Bandit Problems: A Machine Learning Approach**
European Physical Journal: Special Topics, 2025.
4. **A Trusted Multi-Cloud Brokerage System for Validating Cloud Services Using Ranking Heuristics**
Future Internet, Vol. 8, Issue 348, 2025.
5. **Enhanced Multi-Level Recommender System Using Turnover-Based Weighting for Predicting Regional Preferences**
Computers, Vol. 7, Issue 294, 2025.
6. **A Novel Convolutional Neural Network Model for Automatic Speaker Identification from Speech Signals**
IEEE Access, Vol. 12, 2024.
7. **A Novel MAC Protocol for Power Line Communication with Integrated NFC for Smart Home Applications**
Scientific Reports, Vol. 14, Issue 1, 2024.
8. **A Forecasting Approach to Cryptocurrency Price Index Using Reinforcement Learning**
Applied Sciences (Switzerland), Vol. 13, Issue 4, 2023.
9. **An Improved Deep Convolutional Neural Network for Detecting Plant Leaf Diseases**
Concurrency and Computation: Practice and Experience, Vol. 34, Issue 28, 2022.
10. **An Improved Deep Residual Convolutional Neural Network for Plant Leaf Disease Detection**
Computational Intelligence and Neuroscience, 2022.
11. **Design of Crossed Dipole Yagi-Uda MIMO Antenna for Radar Applications**
International Journal of Antennas and Propagation, 2022.
12. **A Five Convolutional Layer Deep Convolutional Neural Network for Plant Leaf Disease Detection**
Electronics (Switzerland), Vol. 11, Issue 8, 2022.
13. **Plant Disease Detection Using Deep Convolutional Neural Network**
Applied Sciences (Switzerland), Vol. 12, Issue 14, 2022.
14. **Detection of Pneumonia Infection in Lungs from Chest X-ray Images Using Deep Convolutional Neural Network and Content-Based Image Retrieval Techniques**
Journal of Ambient Intelligence and Humanized Computing, 2021.
15. **Identification of Plant Leaf Diseases Using a Nine-Layer Deep Convolutional Neural Network**
Computers and Electrical Engineering, Vol. 76, 2019.
16. **Application of Fuzzy Parameterized Generalized Fuzzy Soft Expert Set in Healthcare Decision Making**
Journal of Chemical and Pharmaceutical Sciences, Vol. 8, Issue 4, 2015.
17. **Application of Fuzzy Parameterized Generalized Fuzzy Soft Expert Set in Decision Making**
Global Journal of Pure and Applied Mathematics, Vol. 11, Issue 3, 2015.
18. **Intelligent E-Healthcare Management System in Medicinal Science**
International Journal of PharmTech Research, Vol. 6, Issue 6, 2014.

Conference Publications (Scopus Indexed):

1. **Stacking CNN-Based Deep Networks for Lane Detection on CULane: A Performance-Driven Approach**
2nd International Conference on Research Methodologies in Knowledge Management, Artificial Intelligence and Telecommunication Engineering (RMKMATE 2025), Chennai, May 7-8, 2025.
2. **A Comprehensive Survey on Value-Based and Policy-Based Reinforcement Learning for Traffic Optimization**
RMKMATE 2025, Chennai, May 7-8, 2025.
3. **Deep Q-Network Based Reinforcement Learning for Bitcoin Future Price Prediction**
2nd International Conference on Advancements in Smart, Secure and Intelligent Computing (ASSIC 2024), Bhubaneswar, January 27-29, 2024.
4. **Meat Freshness State Prediction Using a Novel Fifteen Layered Deep Convolutional Neural Network**
International Conference on Data Science and Network Engineering (ICDSNE 2023), Agartala, July 21-22, 2023.
5. **Enhanced Road Safety Through Intelligent Lane Detection and Driver Drowsiness Monitoring**
15th International Conference on Computing Communication and Networking Technologies (ICCCNT 2024), Kamand, June 24-28, 2024.
6. **Identification of Age, Plumage, and Sex of Bird Species Using Pre-Trained Deep Convolutional Neural Network**
2nd IEEE International Conference on Intelligent and Innovative Technologies in Computing, Electrical and Electronics (ICIITCEE 2024), Bangalore, January 24-25, 2024.
7. **Endoscopic Bladder Tissue Classification Using Seventeen Layered Deep Convolutional Neural Network**
ASSIC 2024, Bhubaneswar, January 27-29, 2024.
8. **A Novel 18-Convolutional Layered Deep U-Net Architecture for COVID-19 Infection Diagnosis Through Object Detection on Lung CT Scan Segmentation**
3rd International Conference on Recent Trends in Machine Learning, IoT, Smart Cities and Applications (ICMISC 2022), Hyderabad, March 28-29, 2022.
9. **Six Convolutional Layered Deep Convolutional Neural Network Based Real Time Single Image Super Resolution**
4th International Conference on Smart Electronics and Communication (ICOSEC 2023), Trichy, September 20-22, 2023.
10. **A Novel Three Dense Layered Deep Fully Connected Neural Network for Hyperspectral Image Classification**
ICMISC 2022, Hyderabad, March 28-29, 2022.
11. **Deep Learning-Based Classification of Indian Classical Music Based on Raga**
6th International Conference on Information Systems and Computer Networks (ISCON 2023), Mathura, March 3-4, 2023.
12. **Novel Exotic Projected Quantum Kernel Features-Enabled Neural Network for Handwritten Digit Image Classification**
4th International Conference on Data and Information Sciences (ICDIS 2022), Agra, May 6-7, 2022.
13. **Compressive Strength Estimation of Concrete Blocks using Fully Connected Deep Neural Network**

- 14th International Conference on Advances in Computing, Control, and Telecommunication Technologies (ACT 2023)*, Hyderabad, June 15-16, 2023.
14. **Batch Normalized Siamese Network Deep Learning Based Image Similarity Estimation**
5th IEEE International Conference on Electrical, Computer and Communication Technologies (ICECCT 2023), Erode, February 22-24, 2023.
 15. **Prediction of Chronic Heart Disease using Machine Learning**
International Conference on Intelligent Manufacturing and Energy Sustainability (ICIMES 2022), Hyderabad, June 24-25, 2022.
 16. **Oversampled Deep Fully Connected Neural Network Towards Improving Classifier Performance for Fraud Detection**
ICDIS 2022, Agra, May 6-7, 2022.
 17. **Quantum Generative Adversarial Network and Quantum Neural Network for Image Classification**
International Conference on Sustainable Computing and Data Communication Systems (ICSCDS 2022), Erode, April 7-9, 2022.
 18. **Classification of Land Cover Hyperspectral Images Using Deep Convolutional Neural Network**
International Conference on Advanced Computing and Intelligent Technologies (ICACIT 2022), New Delhi, March 20-21, 2021.
 19. **Time Series Data Error Optimization through Three Stacked Long Short-Term Memory**
4th International Conference on Innovative Data Communication Technologies and Application (ICIDCA 2022), Online (Coimbatore), November 3-4, 2022.
 20. **A Comparative Study of Deep Transfer Learning Techniques for Tomato Leaf Disease Diagnosis**
2nd International Conference on Communication and Artificial Intelligence (ICCAI 2021), Virtual, November 19-21, 2021.
 21. **A Comparative Study of Deep Learning Techniques for Farmer Query Text Classification**
ICCAI 2021, Virtual, November 19-21, 2021.
 22. **Five Layered Ensembled Deep Fully Connected Neural Network based Brain Stroke Prediction**
3rd IEEE International Conference on Computing, Communication, and Intelligent Systems (ICCCIS 2022), Greater Noida, November 4-5, 2022.
 23. **Music Note Series Precipitation using Two Stacked Deep Long Short Term Memory Model**
2nd International Conference on Advances in Electrical, Computing, Communication and Sustainable Technologies (ICAECT 2022), Bhilai, April 21-22, 2022.
 24. **Ten-Layered Deep Convolution Neural Network-Based Tea Leaf Disease Prediction**
ICACIT 2022, New Delhi, March 20-21, 2021.
 25. **Two Layered Deep Long Short-Term Memory Network based Gold Rate Divination**
3rd International Conference on Computing, Analytics and Networks (ICAN 2022), Virtual, November 18-19, 2022.
 26. **A New Kurtosis Spectrogram and One Dimensional Deep CNN Model for High-Speed Bearing Lifespan Estimation on Wind Turbine**
ICAECT 2022, Bhilai, April 21-22, 2022.

27. **Symmetry-Protected Topological Phase Classification Using Hybrid Quantum Convolutional Neural Network with Three Quantum Filters**
ICAECT 2022, Bhilai, April 21-22, 2022.
28. **Efficient Net Transfer Learning based Early Prediction of Monkey Pox Lesion**
3rd International Conference on Smart Electronics and Communication (ICOSEC 2022), Trichy, October 20-22, 2022.
29. **Eight Convolutional Layered Deep Convolutional Neural Network based Banana Leaf Disease Prediction**
3rd IEEE International Conference on Computing, Communication, and Intelligent Systems (ICCCIS 2022), Greater Noida, November 4-5, 2022.
30. **Data Augmentation on Plant Leaf Disease Image Dataset Using Image Manipulation and Deep Learning Techniques**
9th IEEE International Conference on Advanced Computing (IACC 2019), Tiruchirappalli, December 13-14, 2019.

Book Chapter Publications (Scopus):

1. **Deep Convolutional Generative Adversarial Network for Metastatic Tissue Diagnosis in Lymph Node Section**
Signals and Communication Technology, pp. 153–166, 2023.
2. **Quantum Neural Network for Image Classification Using TensorFlow Quantum**
Studies in Computational Intelligence, pp. 171–181, 2023.
3. **A Statistical Analysis of Suitable Drugs for Major Drug Resistant Mutations in the HIV-1 Group M Virus**
Intelligent Systems and Sustainable Computational Models: Concepts, Architecture, and Practical Applications, pp. 397–413, 2024.

Books Published:

1. ***Programming in C++ and Data Structures***, Charulatha Publications, June 2017. ISBN: 978-93-86532-24-4.
2. ***Programming in C++***, Charulatha Publications, May 2017. ISBN: 978-93-86532-17-6.
3. ***Programming in Java***, Charulatha Publications, December 2017. ISBN: 978-93-86532-54-1.

Industry Certifications:

1. Oracle Certification on “*Java Foundations Associate*,” April 4, 2024.
2. NVIDIA DLI University Ambassador on “*Fundamentals of Deep Learning*,” June 2022.
3. Microsoft Certification on “*Azure AI Fundamentals*,” May 27, 2022.
4. GitHub “*Campus Advisor*” Certification, 2019.

Nvidia Certifications:

1. Applications of AI for Anomaly Detection, August 24, 2024.
2. Getting Started with AI on Jetson Nano, May 11, 2023.
3. Fundamentals of Deep Learning, June 17, 2022.
4. Getting Started with DeepStream for Video Analytics on Jetson Nano, March 6, 2020.
5. Fundamentals of Accelerated Data Science, November 1, 2019.
6. Fundamentals of Deep Learning for Computer Vision, November 13, 2018.
7. DLI Platform Course for Instructors, October 25, 2018.

NPTEL Certifications:

1. Introduction to Modern Application Development, April 2018.
2. Design for Internet of Things, September 2017.
3. Programming, Data Structures and Algorithms using Python, March 2017.
4. Programming in C++, April 2017.

Guest Lectures Delivered

1. Fundamentals Of Deep Learning Workshop, VIT Vellore, 26.09.2024
2. A Hands-on FDP in Machine Learning, DSCE Bengaluru, 27.08.2024–31.08.2024
3. Reinforcement Learning, VIT Vellore, 22.12.2023
4. Hands-on Session for Neural Network, VIT Vellore, 20.12.2023
5. Hands-on Session for Clustering and Dimensionality Reduction, VIT Vellore, 21.12.2023
6. Fundamentals of Deep Learning, VIT Vellore, 30.09.2023
7. Heuristic Search Strategies, Dhanalakshmi College of Engineering Chennai, 17.07.2023
8. Fundamentals of Deep Learning, Vel Tech Chennai, 24.06.2023
9. Fundamentals of Deep Learning, VIT Vellore, 09.02.2023–10.02.2023
10. Fundamentals of Deep Learning, VIT Vellore, 02.02.2023–03.02.2023
11. GPU-Accelerated Deep Learning Training Using NVIDIA DGX, Vel Tech Incubator Chennai, 03–04.08.2021
12. Advanced NVIDIA DGX Admin and DL Research, Vel Tech Incubator Chennai, 12–13.04.2021
13. Computer Vision at the Edge with NVIDIA Jetson Nano, Vel Tech Incubator Chennai, 05–06.11.2020
14. Deep Learning at the Edge with Jetson Nano & Raspberry Pi, K Ramakrishnan College of Technology, 21.11.2020
15. TensorFlow for Deep Learning, AICTE FDP, Sri Shakthi Institute Coimbatore, 20.11.2020
16. Deep Learning on IoT using Jetson Nano, AICTE FDP, Sri Shakthi Institute Coimbatore, 20.11.2020
17. Deep Learning in TensorFlow on NVIDIA GPU, Vel Tech Incubator Chennai, 05.09.2020
18. Deploying AI: DL in Production, Vel Tech Incubator Chennai, 19.06.2020
19. Linux, MAM College of Engineering, Tiruchirappalli, 23.08.2019
20. AI and Deep Learning, RVS Kumaran Arts & Science College Dindigul, 01.03.2019
21. IoT Applications in Agriculture, IEI Tiruchirappalli Chapter (BHEL), 27.03.2018
22. Data Analytics, RVS Kumaran Arts & Science College Dindigul, 16.02.2018
23. ML and IoT, Shri Angalamman College of Engg. & Tech. Tiruchirappalli, 31.01.2018
24. AI and DL, Kumaran Polytechnic College, Tiruvannamalai, 13.07.2018
25. AI and DL, Sri Angalamman College of Engg. & Tech. Tiruchirappalli, 14.09.2018
26. Reinforcement Learning (IEEE Workshop), Charusat University Gujarat, 12.12.2018
27. Graph Theory Applications in CS, FDP, Anna University Tiruchirappalli, 2017
28. Reinforcement Learning Models and Applications, TEQIP FDP, Anna University Tiruchirappalli, July 2016
29. Artificial Intelligence, Dhanalakshmi Srinivasan Institute of Technology, Tiruchirappalli, 2016

Awards and Achievements

1. Received Research Award from VIT, Vellore, for consistent research contributions from 2022 to 2025.
2. Achieved Gold Tier status as a DLI Ambassador in July 2025, with an award of 500 USD from the NVIDIA Deep Learning Institute.
3. Worked as a Research Sabbatical, NVIDIA Bennett Research Center on Artificial Intelligence, Dept. of Computer Science and Engineering, Bennett University, Greater Noida, from October 2018 to December 2018.
4. Guided a TNSCST-funded project titled "*Smart Quality Analysis of Onion in Market by Deep Learning*" under the Student Project Scheme 2019-2020, awarded ₹7,500.
5. Presented project "*Design and Implementation of an Intelligent Animal Intrusion Detection System for Farm Protection from Wild Animals using IoT*" at MATLAB EXPO 2018, HICC, Hyderabad, April 24, 2018.
6. Presented project "*Design and Implementation of NFC-Enabled Bio-Patch for Health Care Applications*" at Titan Technology Tune-In, Titan Pvt. Ltd., Hosur, March 13, 2018.
7. Scored Elite Grade in *Introduction to Modern Application Development*, NPTEL, April 2018.
8. Organized MAMCET Hackathon 2018 (36-hour continuous project competition), M.A.M. College of Engineering and Technology, Trichy – 01-02 March 2018.
9. Served as a Mentor in Smart India Hackathon 2017 held at the Techno India NJR Institute, Udaipur – 01-02 April 2017.
10. Won third prize at the national-level student technical symposium, Department of CSE, IFET College of Engineering, Villupuram, February 25, 2012.
11. Scored First Class with Distinction, Diploma in Computer Engineering, Ponnaiyah Ramajayam Polytechnic College, Patteeswaram, April 2010.