

SHIYAMALADEVI R S

+91-8072286109 shiyamaladevirs@gmail.com [linkedin](#) [Portfolio](#) [github](#)

Education

Vellore Institute of Technology

Chennai, India

Bachelor of Technology in Electronics and Communication Engineering — **CGPA: 3.41/4**

Aug 2021 – May 2025

- **Final Semester GPA: 10.0/10** — 163 credits earned
- Relevant Coursework: Machine Learning, Digital Signal Processing, Digital System Design, Digital Communication, Information Theory, IoT, Computer Networks

Srimathi Sundaravalli Memorial School

Chennai, India

Higher Secondary Education (Math, Biology, Chemistry, Physics) — **CGPA: 9.3/10 or 3.72/4**

2012 – 2021

Honors & Awards

Best Paper Award — IEEE ICCCSMD 2024

Dec 2024

Alleviating Muscle Fatigue in Robotic Prosthetic Arms Through Multi-sensor Fusion and Adaptive Real-Time Grip Assistance

Patent Published

Feb 2025

A System For Prosthetic Arm with Non-Invasive Sensory Regeneration

IELTS Academic — Band Score 8.0

Oct 2025

Research Experience

Research Assistant

May 2025 – Aug 2025

Center for Neuroinformatics, Vellore Institute of Technology

Chennai, India

- Designed **cryptographically-secured federated learning framework** using HMAC-SHA256 and AES-256, enabling privacy-preserving model training across 25 simulated medical devices (HIPAA/GDPR-compliant)
- Developed **ultra-lightweight CNN (0.54 MB, 140K parameters)** optimized for Raspberry Pi, achieving **15 ms inference latency** and **98%+ clinical accuracy** in real-time seizure detection
- Implemented **Byzantine fault-tolerant aggregation system** with dynamic trust scoring, achieving **97.5% accuracy** in no-attack scenarios and **95.2% under 30% malicious clients** with **98.7% attack detection rate**

Industry Experience

Supply Chain Machine Learning Intern

Feb 2025 – Jun 2025

Flipkart

Chennai, India

- Engineered Python tool processing **1.3M records** across multiple hubs, reducing processing time from **5 hours to 200 seconds (99.8% reduction, 432X efficiency boost)**, saving significant operational capital
- Developed and deployed **transfer learning-based image classification pipeline** for Open Box Delivery quality assurance, achieving **89% overall accuracy and 96% recall** for low-quality images using fine-tuned ResNet50
- Built end-to-end automated workflow integrated with Google Sheets, enabling non-technical operators to run real-time quality checks, **reducing manual inspection overhead by 60%**

Section Leader

Apr 2025 – Jun 2025

Stanford Code in Place

Remote

- Selected from **global applicant pool** to lead 6-week Python programming section for 15 students, teaching core concepts including variables, control flow, functions, lists, and dictionaries
- Facilitated weekly interactive coding sessions, provided personalized feedback, and supported diverse learners through hands-on exercises

AWS Project Intern

Aug 2023 – Dec 2023

Ethnus

Remote

- Implemented Amazon EC2 and Elastic Beanstalk to host E-Health Record Management System, utilized S3 for diagnostic image storage with role-based access control
- Leveraged AWS RDS, Lambda, and CloudWatch for robust, scalable healthcare system architecture

Instrumentation Intern

Sep 2023 – Oct 2023

Saipem India Projects Pvt Ltd

Chennai, India

- Ensured compliance with engineering specifications through P&ID checks and streamlined data sheet validation
- Built foundation in oil & gas operations, control systems, and instrumentation using SmartPlant software

Publications & Manuscripts

Alleviating Muscle Fatigue in Robotic Prosthetic Arms via Multi-Sensor Fusion	Published
• IEEE ICCCSMD 2024 — Best Paper Award — Multi-sensor adaptive control system for prosthetic arm optimization	
Security Auditing & Malicious Client Blocking in Federated EEG Seizure Detection	Under Review
Automated Classification of E-Commerce Packaging for Open Box Delivery	Under Review
Swara-Net: A Deep Learning Baseline for Under-Represented Carnatic Ragas	Under Review

Technical Skills

- Programming Languages: Python, SQL, Java, MATLAB, C
- Machine Learning/AI: TensorFlow, Scikit-learn, CNNs, TimeSeries Forecasting, Federated Learning, Transfer Learning, PyTorch
- Cloud & Big Data: AWS (EC2, S3, RDS, Lambda, Elastic Beanstalk, CloudWatch), Google Cloud
- IoT & Embedded Systems: Arduino, ESP32, Raspberry Pi, Sensor Data Processing, Real-time Systems
- Data Visualization: PowerBI, Tableau, Excel, Google Sheets, Matplotlib, Seaborn
- Cryptography & Security: AES-256, HMAC-SHA256, Byzantine Fault Tolerance, Privacy-Preserving ML
- Other Tools: Git/GitHub, Docker, Flask, Data Cleaning, Feature Engineering, LaTeX

Leadership & Extracurricular

Fellowship Member — Your Big Year	Jan 2024 – Present
• Collaborating with global youth leaders on sustainability and social impact initiatives	
Bharatanatyam Classical Dancer	2010 – Present
• Trained classical dancer with 10+ years of performance experience in cultural and traditional events	
School Team Member — VITeach	Sep 2023 – Dec 2024
• Supported educational outreach by visiting rural schools and developing study materials for underprivileged students	
Research Member — Tech Researchers Club	Sep 2023 – May 2024
• Engaged in research discussions and contributed to mini research projects on emerging technologies	
Project Member — IEEE Photonics Society Student Chapter	Jan 2023 – May 2024
• Contributed to project focused on bite force measurement using photonic technologies	