



CORE COMPETENCIES

Programming Languages

Python | C | C++ |
Shell Scripting | MATLAB

Software & Tools

CST Studio Suite | Cisco Intersight |
Cisco DevNet | Cisco Umbrella |
MATLAB |
VS Code | Py Charm | Terminal |
MS Word | MS PPT | MS Excel

Dev Tools

Linux | Docker | GitHub Actions |
YAML | Amazon Web Service (AWS) |
Google Colab | Firebase | Flutter Flow |
MIT APP INVENTOR |

Frameworks & Libraries

Tensorflow | Flask | Streamlit | YOLO |

CNN | DNN EXPERTISE



CONTACT INFO

-  Charan Velavan
-  charanvelavan12@gmail.com
-  +91-9884114700
-  CharanVelavan

PROFILE SUMMARY

Electronics and Communication Engineering graduate with experience in embedded systems, 5G platforms, and Linux-based development. Proficient in C/C++, Python, and system-level debugging, with exposure to performance analysis, log-based troubleshooting, and non-functional testing.

PROJECTS ACCOMPLISHED

Bird's AI: 5G Drone System

([Git](#))

Nokia Bangalore Oct'24

- Developed a 5G-enabled Search & Rescue Drone for disaster management, leveraging Edge Computing for **autonomous** navigation and real-time survivor detection from a **50-meter** altitude, including under tree cover.
- Successfully integrated Bird's AI into a **commercial 5G radio** system at **Nokia Bangalore**.
- Tech Stack:** Raspberry Pi 5 – Hailo Ai Kit - Custom Drone - AWS - YOLO - Pushbullet - Solidworks - Python - Linux - Threading

Nephele: Community Robot

Amazon Web Services Sept'24

- Developed Nephele (ROBOT) using swarm robotics, AI, **serverless cloud architecture** and **PCB design** to solve challenges in education and events.
- Integrated **Meta's Llama 2.0** (LLM) for context-aware responses & improved engagement enabling features like QR attendance, face recognition, and sentiment analysis.
- Implemented **swarm-coordinated** features, QR attendance, face recognition, sentiment analysis, resume grading, and campus tours.
- Tech Stack:** Amazon Web Services (DynamoDB - Polly - Rekognition - Lambda - API Gateway - S3) - Meta Llama 2.0 - Python - Linux - EasyEDA - KiCad

5G Network Implementation

Techphosis & PEP 5G May'24

- Implemented a 5G network using Open5GS, srsRAN, Ubuntu, and MATLAB, ensuring robust and efficient operations..
- Analyzed log files from critical network functions like **AMF** and **BSF** to derive insights and optimize network performance.
- Tech Stack:** Linux - srsRAN - Open5GS - MATLAB - POWDER Wireless - USRP B210

Domestic Emotion Monitoring System

([Git](#))

AICTE - ARM India - ST Microelectronics Nov'23

- Built an Emotion Monitoring System on **STM32MP135F-DK** Board to detect patients' mental conditions.
- Deployed a custom DNN-based ML model using TensorFlow Lite and **Micro-Python** for real-time inference.
- Achieved efficient performance on **resource-constrained hardware**, enabling real-time inference for embedded systems.
- Tech Stack:** STM32 Board- PYTHON 3.8 - LINUX – OpenST Linux - DNN - TFLITE - GIT - STREAMLIT - MIT APP INVENTOR

 **INTERNSHIPS****Techphosis**[Inten Report.](#), Mar'24 - May'24

- Gained expertise in implementing 5G-based **ORAN** architecture using open-source tools and **USRP B210 SDR**, emphasizing openness and interoperability.
- Integrated ORAN principles (CU and DU) for efficient and scalable 5G network deployments.
- Acquired in-depth knowledge of 5G layers, their functionalities, and interactions within the network.
- Analyzed RAN and Core Network logs, deriving insights into network performance and latency optimization.
- Developed practical skills in SDR programming and signal processing, essential for real-world 5G applications.

SSN College of Engineering[Journal Paper](#), May'24 - July'24

- Designed a **dual-mode bandpass filter (BPF)** using fractal-based Swastik slots on a square patch resonator for high-performance Terahertz (THz) applications at **3.88 THz**.
- Achieved an ultra-compact size of **7.99 × 7.99 μm²** with insertion loss of 1.637 dB and return loss exceeding 38.32 dB at the target frequency.
- Utilized **CST Studio Suite** and MATLAB to design and simulate Fractal-based BPFs
- The Band Pass Filter were designed for Medical Imaging applications.

ZOHO Corporation

Jan'25 - June'25

- Built **Python** and **Bash scripts** to automate software verification, deployment checks, and system diagnostics.
- Performed log analysis and failure investigation to identify root causes of software installation and runtime issues.
- Assisted in designing reusable scripts and utilities to improve efficiency of software lifecycle operations.
- Supported requirement analysis and technical documentation for internal tools and workflows.
- Acquired experience in **Linux-based** environments, remote debugging, and automation-driven reliability improvements.

**ACADEMIC DETAILS****M.E., Communication Systems**
SSN College of Engineering, Chennai

CGPA (8.24/10)

**B.E., Electronics and Communication Engineering**
St. Joseph's College of Engineering, Chennai

CGPA (7.69/10)

NOTABLE ACCOMPLISHMENTS

- **Design Mentor** - Smart India Hackathon 2024 (AICTE - MIC Alumni)
- **Winner** - Nokia 5G Use Case deployment Ideathon.
- **Winner** - AICTE, ARM India, ST Microelectronics Inventors Challenge 2023
- **Finalist – Team Leader** - Smart India Hackathon 2023 (Software Edition)
- **Finalist – Team Leader** - Smart India Hackathon 2022 (Hardware Edition)
- **Finalist** – Team Leader - S.A.P PSG ITECH HACKFEST'23
- **Winner** - Evaluation & Humorous Speech Contest, AREA F4 level - **Toastmasters International**

**CERTIFICATIONS**

Jan'25: Cisco Networking Basics

May'24: German Academy of Digital Education (DADB) - 5G Technology

Nov'23: Qualcomm academy - Fundamentals of Cellular Communication & 5G

Oct'23 : Qualcomm academy - 5G Primer