

Avaneeth Anil

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EDUCATION

Northeastern University, Boston, MA

Dec 2026

Master of Science in Internet of Things

GPA: 4.0

Relevant Courses : Wireless Systems and IoT, Wireless Communication, Statistical Inference, Computer Hardware and System Security, MEMS, Mobile Robotics, Spectrum Policy, Fundamentals of Computer Engineering, Applied Probability

RV College of Engineering, Bengaluru, India

Aug 2023

Bachelor of Engineering in Electronics and Telecommunication Engineering

Relevant Courses : Deep Learning, Digital Signal Processing, Digital Modulation and Coding, Computer Networks, Cryptography, Data Structures, Python, C, Systems Engineering, Microwave Engineering, Optical Fibers, Project Management

TECHNICAL SKILLS

Wireless Systems & IoT : 5G NR, Open RAN, OpenAirInterface, Digital twin frameworks, Radio Maps, Channel Modeling & Emulation, Ray Tracing, Colosseum testbed, SDR (USRP), LoRaWAN, BAN Sensor Networks, Edge Computing

Machine Learning & DSP: TensorFlow, PyTorch, CNNs, RNNs, Transformers, Time-Series Signals, Signal Processing (EEG/ECG), Real-Time DSP, Model Optimization (CUDA, TensorRT, ONNX)

Programming & Data: Python (NumPy, pandas, SciPy, Scikit-learn), MATLAB, C/C++, JS, Bash, FastAPI, Flask, Leaflet, Docker, Git, Linux/HPC, Nginx, Gunicorn

RESEARCH EXPERIENCE

Research Assistant | *Institute for Intelligent Networked Systems, Boston, MA*

Jun 2025 – Present

- Developed TwinFORGE, a RAN digital twin replacing ray tracing with multi-cell AI-based radio map as the in-loop channel source, driving a live OpenAirInterface 5G NR stack through an IQ-level GPU channel emulator.
- Integrated run-time path loss injection into OpenAirInterface via the telnet channelmod interface, enabling closed-loop link adaptation experiments driven by radio map predictions rather than static channel models.
- Built a MATLAB pipeline curating STN-GPi local field potential dataset from deidentified Parkinson's patients and trained a CNN/GRU/LSTM models to predict behavioral response times at 82% accuracy, using a custom loss for class imbalance.
- Built a BAN sensor network with ultrasonic transmission for real-time EEG/ECG acquisition and classification, and deployed the SeizNet deep learning framework for seizure prediction at 98% accuracy and 0.08 FPR.

Research Assistant | *The Ondrechen Research Group, Northeastern University, Boston*

Aug 2025 – Mar 2026

- Engineered production-grade FastAPI server for protein analysis algorithms, handling 16 concurrent workers across 24 CPU cores with automated SSL/TLS encryption and 3600-second timeout enforcement for resource management
- Developed three-tier RESTful architecture with Nginx reverse proxy and Gunicorn WSGI orchestration, supporting multi-stage protein analysis pipelines with automated ZIP archive validation, subprocess isolation, and dynamic visualization generation

WORK EXPERIENCE

Graduate Teaching Assistant - Mobile Robotics | *Northeastern University, Boston, MA*

Sep 2025 – Dec 2025

- Graded assignments, quizzes and project reviews for 40+ graduate students while managing course administration on Canvas to enable streamlined Mobile Robotics coursework delivery
- Held weekly office hours providing one-on-one tutoring and support to students on complex topics including SLAM, localization, and path planning algorithms

Planner - Robotics Implementation | *K12 Technoservices Pvt. Ltd., Bengaluru India*

Jan 2024 – Jul 2024

- Led Robotics and Internet of Things Implementation for STEM-based education modules in India by designing circuits and PCB through SPICE technology and EasyEDA
- Constructed six bots as participating entries for the World Robotics Championship by Technoxian through manufacturing and SPICE-based hardware implementation, with one entry achieving second place among 500+ teams

Electrical Engineer Intern | *Citriot Solutions Pvt. Ltd., Bengaluru, India*

Mar 2023 – Aug 2023

- Built and Patented a Machine Health Monitoring device called **CogniSense** incorporating sensor fusion and Deep Learning to perform AI-driven predictive analysis aligning with automation and process optimization workflows.
- Developed an ad-hoc sensor network named **Par-King** on the standard IoT Wireless framework of LoRaWAN to enable app-based smart parking in selected parking spots in the city of Bengaluru