




Karthik Ganta

✉ ganta.k@northeastern.edu  GitHub  Karthik Ganta  Ganta-Karthik1999 ☎ (857)-398-5909

EDUCATION

Northeastern University

Masters of Science in Cyber Physical Systems

Relevant Coursework: Fundamentals of IOT, Embedded Systems, Machine Learning for IOT, Algorithms, Connected Devices

August 2023 – December 2025

Boston, MA — GPA: 3.76/4

Andhra University

Bachelors of Technology in Electronics and Communication Engineering

Relevant Coursework: Control System, Microprocessor/Controller, Data Structures and Algorithms, Digital Logic, Signal processing.

July 2018 – June 2021

Visakhapatnam, India

TECHNICAL SKILLS

Programming Languages:	C, C++, Python, Rust, Java, MATLAB, Assembly Language, Bash scripting
Microprocessor Devices:	STM32, Arduino, ESP8266, Raspberry Pi, ARM Cortex M4, 8051, FPGA
Communication Devices/Tools:	Wi-Fi, ZigBee, LoRa, Bluetooth, Oscilloscope, Signal Generator, Multimeter, LabVIEW.
Communication Protocols:	UART, I2C, SPI, MQTT, CoAP, TCP/IP, HTTP, CAN, DWDM, OTN, Ethernet
Frameworks:	Socket programming, Ansible, Yocto Project, Git, Qt, JavaFX, Sktime, scikit-learn, NumPy, Pandas
Operating Systems:	Windows, Ubuntu, Linux, ROS, FreeRTOS, VxWorks

PROFESSIONAL EXPERIENCE

ITC Infotech

Network Security Engineer

January 2022 - July 2023

Bengaluru, India

- **Ansible Automation:** Orchestrated an automated router configuration system using Ansible, streamlining 400+ configurations and deepening expertise in networking protocols.
- **Ethernet Security Enhancement:** Managed PAM for 5,000+ employees, securing Ethernet systems by implementing data link layer protocols and firewall rules to protect against cyber threats.
- **CI/CD Automation with Docker:** Utilized Git, Python, Docker, and Jenkins for CI/CD processes to automate testing and containerize tools, improving deployment consistency by 20% and reducing deployment time by 15%.

Greyhounds R&D

Embedded System Intern

July 2021 – January 2022

Visakhapatnam, India

- **RFID System:** Constructed an RFID attendance monitoring system for 1000+ employees with real-time tracking via IFTTT cloud and BLYNK APP, and encrypted data storage in SSDs.
- **STM32 Firmware:** Constructed and tested drivers for peripheral devices using STM32 microcontrollers, contributing to a real-time firmware project and enhancing system performance under real-time constraints by 20%. Implemented mutual exclusion mechanisms, synchronization techniques, and ISRs for hardware interrupts, and designed IPC mechanisms.
- **PCB Design:** Achieved 95% precision in designing circuits with **Altium Designer** for the robotic control system. Reduced component placement time by 15% through optimized PCB layout for the robot's control and communication modules.

ACADEMIC PROJECTS

Bomb Disposal Robot | *FreeRTOS, Altium, I2C, SPI, UART*

- Engineered a robot with three 3-axis arms for inspection, disarmament, and holding wires. Achieved 95% precision in designing circuits with Altium.
- Devised a robust remote control system for the robot utilizing Bluetooth and Wi-Fi connectivity; reduced operational response time by 40% and improved user engagement through a newly Modeled mobile application interface.
- Authored and published in the International Research Journal of Engineering and Management Studies [IJSREM](#).

IOT Agriculture Robot | *FreeRTOS, TensorFlow, RViz, ROS*

- Developed an IoT agricultural robot using TensorFlow to detect dry and wet land with **90%** accuracy, visualizing results in RViz and real-time sensor data (moisture, humidity, temperature, pH) in Ubidots.
- Integrated FreeRTOS and ROS on a Raspberry Pi to manage navigation and sensor data, increasing processing efficiency by **30%**, providing farmers with real-time insights on soil conditions.

LEADERSHIP/ACHIEVEMENTS

Achievements: Winner Of Dual-A-THON (Hackathon), Winner of National Fest Held in Welfare College.

Head of IOT Lab: Led a V2V communication project using Matter over OpenThread for real-time accident detection.

Member of Northeastern Aerospace Club: Developed and tested a flight controller for an autonomous drone.

Teaching Assistant: Fundamentals of IoT and Embedded systems at Northeastern University, Boston, MA.