

# Ajay Mareedu

E-Mail: mareeduajay1@gmail.com

Phone: +91-9494188550

LinkedIn: <https://www.linkedin.com/in/ajaymareedu>

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## Profile Summary:

Enthusiastic engineering fresh graduate with a strong foundation in Embedded Systems, and Linux operating system. Proficient in C, C++ basics, with hands-on experience in developing and testing embedded applications through academic projects. Familiar with communication protocols UART, I2C, SPI and CAN. Familiar with tools such as gdb, Strace, Ltrace and Mtrace for debugging software and familiar with versioning tool Git.

## TechnicalSkills:

- C Language, C++ basics
- Data structures (Linked lists)
- Linux System programming / Linux OS Internals:
  1. File concepts (create, open, close, read, write), System calls and Function calls
  2. Memory management
  3. Process management (Fork, VFork and exec calls), Context switching
  4. Thread concepts (User space and Kernel space), Mutex locks
  5. IPC mechanisms, Mutex and Semaphores
- Signals (software interrupts)
- Embedded Systems, LPC1768 Microcontrollers, ARM Cortex (32-bit)
- Communication protocols: TCP/IP, UDP, UART, I2C, SPI, and CAN
- RTOS (Basics, Task scheduling, Priority handling)
- Shell Scripting (bash basics), Kernel basics
- Debugging tools: gdb, S-trace, M-trace, L-trace, Keil uVision, FlashMagic, HFSS.

## Certifications:

- Embedded Developer Virtual Internship - AICTE Eduskills, Delhi
- Android Developer Virtual Internship - AICTE Eduskills, Delhi
- Cisco Networking Academy - Course Completion Certificate
- Linux Certification - Naukri Learning

## Education:

- Trained in Advance Embedded systems from **Cranes Varsity**, Bengaluru
- B.Tech in Electronics and Communication Engineering from **Sasi Institute of Technology & Engineering**, Tadepalligudem under JNTUK in year 2024 with an overall aggregate of 72%
- Diploma in Electronics and Communication Engineering from **Sri Vasavi Engineering College**, Tadepalligudem under SBTET Vijayawada in the year 2021 with an aggregate of 70%
- Sri Vidya High School, Dharmajigudem, in the year 2018 with 9.7 CGPA

## **Projects UnderTaken:**

### **Project #1: Smart Irrigation System Using LPC1768 with Multi-Sensor Control Description:**

The main aim of this project is to build an embedded system that monitors soil moisture and controls a water pump accordingly, using Microcontroller. The primary purpose of the system would be to automate irrigation efficiently based on real-time sensor data, along with features such as reading sensor values, turning the pump ON or OFF, and displaying system status, all through GPIO and ADC interfaces.

#### **Roles and Responsibilities:**

- Involved in Analysis & Design of entire Product
- Involved in coding Involved in overall product
- testing and debugging

### **Project #2: Design and Analyze Multiband MIMO Antenna for mmWave Applications Description:**

The main aim of this project is to design and analyze a multiband MIMO antenna suitable for mm wave communication. The primary purpose of the system would be to support multiple frequency bands used in 5G and future wireless systems, along with features such as compact size, high isolation between elements, and stable radiation patterns, all validated through simulation using HFSS software and performance analysis.

#### **Roles and Responsibilities:**

- Involved in Designing of multi-element MIMO antenna using HFSS
- Involved in simulation and analysis for performance optimization
- Acted as Team Lead Evaluated Antenna compactness, efficiency, and Performance for 5G and future wireless communication systems.

### **Project #3: Movie Ticket Booking System Using C Programming Description:**

The main aim of this project is to build a console-based application using C programming to manage movie tickets, allow users to book or cancel tickets, and display booking summaries, along with seat selection, movie listing, and real-time booking status all implemented through file handling.

#### **Roles and Responsibilities:**

- Involved in Designing and implementing core logic
- Involved in coding and testing functionalities
- Involved in Handling file I/O for storing booking data

## **Declaration:**

I hereby declare that the above-mentioned information is correct to the best of my knowledge.

(AJAY MAREEDU)