

AMITHA GONDESI

📍 Visakhapatnam, India-530044 | ✉️: amithajul6@gmail.com | 🌐: www.linkedin.com/in/amithajul6/ | ☎️ 8125747063

Profile Summary

Dedicated and results-oriented Embedded Systems Engineer with a strong foundation in C programming, data structures, and system programming. Possessing hands-on experience in embedded systems development, including microcontroller programming, peripheral interfacing, and Linux kernel interactions. Proven ability to design, develop, and implement efficient embedded solutions. Seeking a challenging role to leverage technical expertise and contribute to innovative projects.

Technical Skills

- **Programming Languages:** Shell Scripting, C (Advanced), Data Structures
 - **System Programming:** Linux Kernel System Calls, IPC Mechanisms (Pipe, FIFO, Shared Memory), Network Programming (TCP/UDP Sockets), Multi-Threading
 - **Embedded Controllers:** Hands-on experience with GPIOs, Analog I/Os, Memory Management, Interfacing, Character LCDs
 - **Peripherals:** Timers, Counters, Interrupts, Communication Protocols (UART, SPI, I2C)
 - **Embedded Platforms:** Linux (Fedora/Ubuntu), PIC (16F877A) boards, Arduino Uno R3 boards
 - **Development Environment & Tools:** Dev Environment (Vim, Makefiles, MPLAB), Compilers (GCC, XC8), Debuggers (GDB), EDA Tools (OrCAD, Eagle, TannerEDA, Tinker CAD)
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Work Experience

- **Advanced Embedded Systems Trainee: Emertxe Information Technologies, Bangalore (Nov 2022 - Aug 2023)**
Completed a hands-on training course on advanced embedded systems, gaining practical experience in various technologies.
 - **Project Assistant: In Person (Dr. Supriyo Chakraborty) (Aug 2015 - Aug 2017)**
 - Supported research activities by collecting rainwater samples, measuring rainfall rates, and documenting findings.
 - Maintained accurate and efficient data entry using MS Office applications.
 - Organized and maintained project files, filing systems, and project communications to ensure smooth project execution.
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Personal Attributes

- Quick learner with a strong ability to adapt to new technologies and initiatives.
 - Effective time management skills to meet deadlines consistently.
 - Team player with a strong work ethic, committed to hard work and delivering high-quality results.
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Education

- B.Tech (ECE) | NSRIT College of Engineering (2009-2013) | 68.43%
 - Class XII | State Board (2009) | 80.9%
 - Class X | State Board (2007) | 89.33%
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Certifications, Courses & Internships

- Crash Course in Electronics and PCB Design (Udemy) - Andrew Lathmen
 - Internship in PCB Design | Pantech Prolabs Pvt Ltd
 - Arduino Programming | Internshala
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Publications

- An Area Efficient Reversible Multiplier Circuit Design By Using Low Power Technique (International Journal of Engineering Research and Applications, Vol. 3, Issue 2, Mar-Apr 2013, pp. 1819-1824)
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Achievements

- Merit Student Award for Highest Marks in SSCL Examination
 - Cleared the assessment for the role of Embedded Software Engineer (ELR/Q1501) with 91.3% conforming to National Skill Qualification Framework Level-5.
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Projects

Project 1: Image Steganography using LSB Encoding and Decoding

- **Brief:** Sent a secret text file encoded inside an image in BMP format. Encoded the length of the secret text and the data into the LSB of the image bytes. Decoding involved retrieving the length and the secret text bit by bit.
- **Technologies:** Embedded C (File operations, Pointers, Bitwise operations, Functions, Make files, Command line arguments)
- **Key Challenges & Learnings:** Understanding image file pixels and headers, embedding information without altering image properties, bitwise data manipulation.

Project 2: Inverted Search

- **Brief:** Created an Inverted Index for fast full-text searches in a hash table or document set, allowing quick content location.
- **Technologies:** C language (Functions, File I/O operations, File pointers, String operations, Structures), Data Structures (Hashing, Linked List)
- **Key Challenges & Learnings:** Implementing hashing and linked list operations, utilizing Make files, identifying and updating data in files.

Project 3: Car Black Box

- **Brief:** Developed a Car Black Box to log event activities for investigation purposes, extendable to any transportation system.
- **Technologies:** C language (String operations, Bitwise operations)
- **Key Challenges & Learnings:** LCD, ADC, and Timer configuration.

Project 4: Command Line Test

- **Brief:** A shell script enabling user registration and login, with the ability to take multiple-choice tests or view previous results on the command prompt.
- **Technologies:** BASH shell scripting (Loops, Arrays)

Project 5: MiniShell

- **Brief:** Developed a mini-shell for user interaction with the operating system using Linux Kernel System calls and IPC mechanisms.
- **Technologies:** C language (Linux system calls, Signal handling)
- **Key Challenges & Learnings:** Understanding system calls, signal handling, IPC complexity, command execution.

Project 6: Home Automation system

- **Brief:** Developed Arduino-based home automation system incorporating temperature control, outdoor lighting, burglar detection, and water level monitoring. Utilized LiquidCrystal library, various sensors, and actuators. Addressed challenges in sensor accuracy, power consumption, and system reliability.
 - **Technologies used:** Embedded C, Arduino, LiquidCrystal library, sensors (temperature, light, ultrasonic), actuators.
 - **Key challenges:** Sensor accuracy, power efficiency, system reliability
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Academic project

Project: Design of Reversible Multiplier using Different Low Power Techniques

- **Brief:** Proposed two new reversible logic gates (ABC and GPS) and implemented a new reversible multiplier circuit for power minimization applications.
 - **Technologies:** Tanner S-Edit, Tanner L-Edit, Tanner T-spice, Tanner DRC/LVS
 - **Key Challenges & Learnings:** Optimizing circuit design for area, power, and speed trade-offs, minimizing gate delays and circuit complexity.
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DECLARATION

I hereby declare that the details furnished above are true and correct to the best of my knowledge and belief and I undertake to inform you of any changes therein immediately. In case any of the above information is found to be false or misrepresenting, I am aware that I may be held liable for it.

G. Amitha