

Maram Prathibha Reddy

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Education

B.Tech in Electronics and Communication Engineering

Amrita Vishwa Vidyapeetham, CGPA 8.59/10

September 2021 – Present | Chennai, India

Intermediate Education

Narayana Junior Collage, 936/1000

June 2019 – May 2021 | Vijayawada, India

Work Experience

Embedded System Intern

Centre for Development of Advanced Computing Chennai, India

June 2023 – July 2023 | Chennai, India

- Conducted extensive **literature review** and **techno-commercial survey**, evaluating 20+ components for the selection process of a **Smart bed for paralyzed patients**, ensuring thorough research and informed decision-making with all available alternatives.
- Successfully **implemented** and **demonstrated** a **simulation** of the **smart bed system**, showcasing its efficacy in a controlled environment and validating its functionality in preventing and managing pressure ulcers.

Project

Color Image Encryption using FPGA

June 2024 – present

- Currently developing** an advanced color image encryption scheme incorporating novel scrambling techniques and a modified 2D logistic cascade map.
- Focusing on FPGA implementation** to achieve real-time encryption with high efficiency and security.
- Designing hardware architecture** to handle complex encryption operations, optimizing for speed and resource utilization.
- Aiming to enhance** the security of image data transmission through innovative cryptographic techniques.

Forest Fire Detection and Alert System

August 2023 – October 2023

- Integrated Arduino IDE with STM32 and LoRa modules** for hardware development, demonstrating proficiency in combining various technologies to create cohesive systems.
- Engineered a groundbreaking **LoRa-based peer-to-peer communication system**, showcasing innovation in long-range, low-power wireless communication, and achieved a remarkable **100-meter accessible range**.
- Developed a wireless sensor-based end device** for deployment across different forest locations, capable of continuously monitoring dry and hot weather conditions, detecting thunder strikes and fires, and utilizing a buzzer to alert animals and nearby villages.

Audio Encryption and Decryption

July 2022 – November 2022

- Incorporated Jupyter Notebook** into the workflow, resulting in an enhanced data-driven decision-making; contributed to increase in project-efficiency.
- Streamlined an idea** for secure data transmission via converting audio inputs into **ASCII codes**, results in a code efficiency and reducing the time required for bug fixes.

Positions Of Responsibility

Vice Chair | Women In Engineering

IEEE Student Branch

September 2023 – present

- Conducted in-depth research for scholarships** offered by IEEE, identifying potential funding opportunities to support educational and professional development.
- Coordinated the technical event "TinkerIT"** at Tantrosav'24, successfully managing participation of **25 teams showcasing their innovative ideas**, ensuring smooth event execution and high engagement.
- Volunteered at several events, including guest lectures by industry professionals, contributing to the organization and facilitation of knowledge-sharing sessions.

Technical Skills

Coding Languages: C++, Python, Embedded C, VHDL.

Tools: VS Code, Jupyter Notebook, Google Colab, LTspice, Arduino IDE, Code Blocks, Keil µVision, Xilinx Vivado.

Extracurricular

- Participated in **IEEEExtreme 17.0** Programming Competition (ranked 1900 out of 7091).
- Took Part in **Passive Hack event** and **Circuitual Dilemma** event of Tantrotsav'23.
- Cognizance Club Member focused on **coding, solving Kaggle problems**.

Other Information

Certificates and other documents can be viewed at [🔗](#)