

# Pranav A

Electronics & Computer Science Engineer | Focused on Embedded Systems & VLSI Design

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## EDUCATION

**Maharishi Vidya Mandir Senior Secondary School**, No. 28, Dr Gurusamy Rd, inside Maharishi Gardens, Chetpet, Chennai, Tamil Nadu 600031 — *Xth Grade-84%*

March 2018 - April 2019

**Maharishi Vidya Mandir Senior Secondary School**, No. 28, Dr Gurusamy Rd, inside Maharishi Gardens, Chetpet, Chennai, Tamil Nadu 600031 — *XIIth Grade-85.2%*

March 2020 - June 2021

**S.R.M Institute Of Science and Technology**, R2FV+6Q7, Potheri, SRM Nagar, Kattankulathur, Tamil Nadu 603203 — *B.Tech-Electronics And Communication Engineering-CGPA-8.48*

September 2021 - June 2025

## COMPLETED PROJECTS-VERILOG(VLSI)

### **Design and Implementation of an 8-bit Microcontroller with ALU, RAM, ROM, and Encoder-Decoder Using Verilog**

This project involves the design and implementation of a simple 8-bit microcontroller using Verilog. The microcontroller features an 8-bit ALU for arithmetic and logic operations, along with integrated RAM and ROM for memory management. Additionally, encoder and decoder components are included for signal processing, showcasing a complete and functional microcontroller architecture.

Project link-(GitHub)

<https://github.com/PranavSRMECE2125/8-bitmicrocontroller-verilog->

## SKILLS

Python.  
Verilog-VLSI.  
Embedded C.  
FPGA.  
Mysql -RDBMS.

## AWARDS

Arduino Day Hackathon winner-IoT based Home Automation

Certificate Of Merit -Smart Fire Extinguisher System with IoT.

HackFest 2024 by IEI- RFID Based Door lock with password and LCD display features..

## LANGUAGES

English,Tamil,Hindi

## **COMPLETED PROJECTS-EMBEDDED**

### **Unified health and motion monitoring wearable for senior citizens-**

Developed a wearable health and motion monitoring device for senior citizens using the STM32F401CCU6 microcontroller, integrating the MPU6050 sensor for real-time fall detection and motion tracking, and the MAX30102 sensor for continuous heart rate, SpO<sub>2</sub>, and body temperature monitoring. Enabled wireless cloud connectivity via ESP8266 for remote data logging, real-time alerts, and mobile dashboard access, enhancing caregiver responsiveness and elderly safety.

### **Prototype On IoT based Agricultural System —**

Stm32 microcontroller used at different Fields used in Star Topology for sending Data to the primary Hub where the Info of independent mobile units can be measured These sensor values are used for weather prediction and autonomous irrigation system.

### **RFID-Based Secure Lock System with Server-Side User Authentication and Keypad Passcode Verification —**

This project implements a secure lock system using RFID technology for user identification. When a user scans their RFID card, the system retrieves their data from a server for authentication. Once authenticated, the user enters a passcode through a keypad to unlock the system. The lock can be both opened and closed using this process, ensuring a double layer of security through RFID and passcode verification.

### **IoT-Enabled Home Automation System with Automated Appliance Control and Intruder Alert—**

This project focuses on an IoT-enabled home automation system where lights and fans are automatically controlled by PIR sensors based on room occupancy. In addition to energy-saving automation, the system also includes an intruder alert feature, notifying the user of unauthorized access through connected devices. This combination enhances both convenience and security in smart home environments..

### **Automated Fire Detection and Extinguishing System with Sensor-Based Activation—**

This project designs an automated fire extinguisher system that detects fire and hazardous gas using specialized sensors. Once a fire is detected, the system automatically activates a water pump to extinguish the flames, ensuring rapid response and minimizing damage. This solution provides a cost-effective and efficient approach to fire safety in homes or workplaces.

