

# Mohanish Gunda

B.Tech - (2023-27)  
Electronics and Communication Engineering  
Vellore Institute of Technology - Amaravati

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## OBJECTIVE

Electronics and Communication Engineering student with interest in Embedded Systems, Web Development, and AI. Learning microcontroller programming, hardware-software interfacing, and IoT applications. Eager to apply and improve my skills in embedded development, AI integration, and full-stack web projects.

## EDUCATION

Degree/Certificate	Institute/Board	CGPA/Percentage	Year
B.Tech. ECE	Vellore Institute of Technology - Amaravati	9.41	2023-27
Senior Secondary	BIEAP Board	97.6	2021-23
Secondary	CBSE Board	83.8	2021

## PROJECTS

- Room Pe** 2025  
*Web Development* Github
  - Developed a full-stack web application for property listings and bookings using Node.js, Express, and EJS with a modular backend architecture.
  - Designed RESTful CRUD APIs and integrated MongoDB Atlas using Mongoose for efficient data handling.
  - Implemented secure authentication and session management using Passport.js.
  - Deployed the application on Render with cloud-based media storage using Cloudinary.
- Smart Home Automation System** 2025  
*Embedded Systems | IoT*
  - Designed and implemented an embedded IoT system to control home appliances using microcontroller-based logic.
  - Integrated ESP32 firmware for Wi-Fi communication and real-time device monitoring.
  - Interfaced sensors such as Ultrasonic, DHT11, and LDR for environment-aware automation.
  - Implemented relay-based actuator control with a web interface for visualization and remote operation.
- AI Enabled Wearable Health Monitoring & Early Warning System** 2026  
*Embedded Systems | IoT | Edge AI*
  - Designed and developed an STM32 L-series based low-power wearable system for continuous monitoring of vital parameters including heart rate, SpO<sub>2</sub>, body temperature, and motion.
  - Implemented trend-based early warning algorithms to detect fever risk, cardiac abnormalities, respiratory distress, and fall emergencies before critical thresholds.
  - Integrated multi-sensor data fusion and confidence scoring to reduce false alerts caused by body motion and signal noise.
  - Developed an edge-intelligence decision engine for real-time risk classification without continuous cloud dependency.
  - Enabled offline emergency alerts using buzzer/SMS and real-time data transmission to a doctor dashboard via IoT.
  - Generated doctor-ready health summary reports and event timelines to assist faster diagnosis and decision-making.

## TECHNICAL SKILLS

- Programming:** C, Embedded C, Python, Java, SQL
- Microcontrollers:** STM32 (ARM Cortex-M) (Basic), ESP32, Arduino
- Embedded Systems:** Timers, Interrupts, GPIO, ADC, UART, SPI, I<sup>2</sup>C
- Frontend:** HTML, CSS, JavaScript, React
- Backend:** Node.js, Express.js
- Databases:** MySQL, MongoDB
- Tools:** Linux, Git, GitHub, MATLAB, LabVIEW, Keil  $\mu$ Vision

## CERTIFICATIONS

- Embedded System Design Internship** — Maven Silicon
- C & Java Programming** — NexGen (Offline Coaching)
- MERN Stack Development** — Apna College

## RELEVANT COURSEWORK

- Embedded Systems Design, Microprocessors and Microcontrollers, Digital Electronics, Control Systems