# Manjunath B M

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## Objective

Electronics Engineering graduate with a strong foundation in embedded systems, robotics, and automotive technologies. Proven ability to adapt to fast-paced environments and deliver high-quality results. Seeking opportunities to contribute to innovative projects in the automotive and embedded sectors.

## Skills and abilities

- **Microcontrollers:** Arduino, ESP32, STM32, Raspberry Pi
- **Programming Languages:** Embedded C, Python, C Programming
- **Communication Protocols:** SPI, I2C, UART, UDS, CAN
- **Tools & Technologies:** 3D Printing, LiDAR, Robotics (ROS & RTOS)
- **System Integration:** Automotive systems, ECU development, system optimisation
- **Testing & Validation:** Debugging, compliance testing, quality assurance
- **Other Skills**: Robotics, embedded systems design, real-time motion analysis

## Experience

**Associate Engineer**
L&T Technology Services | 2024 – Present

- Contributed to the BMW project, focusing on system functions and automotive integration.
- Ensured seamless functionality of automotive systems through embedded engineering and ECU development.
- Conducted system optimisation, testing, and validation to meet BMW's stringent quality standards.
- Collaborated with cross-functional teams to deliver robust automotive solutions.

**Intern**
Yolabs | April 2024 – June 2024

- Worked on various robotics projects, gaining hands-on experience in ROS and RTOS.
- Assisted in the development and testing of robotic systems for real-world applications.

**Freelancer – Electronics Projects**
2022 – 2024

- Completed 15+ electronics projects, including microcontroller-based systems and IoT applications.
- Developed expertise in hardware-software integration, debugging, and prototyping.

## Education

**Bachelor of Engineering in Electronics and Communication Engineering**
Vidyavardhaka College of Engineering | 2020 – 2024

- Relevant Coursework: Embedded Systems, Microcontrollers, Communication Protocols (SPI, I2C, UART, CAN), Robotics, and Real-Time Operating Systems (RTOS).
- Academic Projects: Focused on practical applications of embedded systems, including microcontroller programming, sensor integration, and system optimisation.

**PCMB (Physics, Chemistry, Mathematics, Biology)**
Sadvidya Composite PU College | 2018 – 2020

- Strong foundation in core sciences and mathematics, providing a solid base for engineering studies.

## Certification

- Overview : Functional Safety and ISO 26262 - Udemy (January 2025)
- IoT Foundations : Operating Systems Fundamentals - LinkedIn (February 2024)
- Learning FPGA Development - LinkedIn (September 2023)

## Projects

### Smart Hand Gloves

- Designed for paralyzed individuals, the gloves convert hand signs into commands.
- Integrated MPU6050 accelerometer and gyroscope with microcontrollers for real-time motion analysis, enabling the gloves to interpret hand movements and translate them into actionable commands.

### Autonomous Delivery Robot

- Developed a robot prototype capable of delivering packages without human intervention.
- Equipped with sensors and navigation algorithms, the robot autonomously navigates its environment, avoids obstacles, and delivers items to predefined locations.

### Smart Access System using ESP32 Cam

- Created an access system using ESP32 Cam that unlocks when an authorized face is detected.
- Utilizes facial recognition technology to identify authorized users and grant access, enhancing security and convenience.

### Fire Fighting Robot

- Built a robot prototype that detects fire within a specific range and sprays water to extinguish it.
- Equipped with flame sensors and a water pump, the robot autonomously locates and extinguishes fires, making it suitable for hazardous environments.

### Face Detection using OpenCV

- Developed a Python project using OpenCV to detect human faces.
- Implemented computer vision techniques to identify and track faces in real-time, with potential applications in security, surveillance, and user authentication.