

# Abhishek Gupta

AI & Robotics Enthusiast | Mechatronics Engineering Student

Mechatronics Engineering student with hands-on experience in Arduino and ESP32-based embedded systems and a strong interest in AI and robotics. Skilled in C/C++ for embedded programming and Python at a beginner level, with practical robotics projects such as obstacle avoidance robots. Currently learning Data Structures & Algorithms and Robot Operating System (ROS) to build a strong foundation for intelligent and autonomous systems.

## Technical Skills

### ■ Programming

- **Python** (loops; functions)
- **C/C++** (Embedded programming: Arduino, ESP32)

### ■ Embedded Systems & Robotics

- **Arduino** (sensor interfacing, motor control, basic robotics projects)
- **ESP32** (microcontroller programming, I/O handling)
- **Sensors:** Ultrasonic, IR, Temperature (practical experience)

### ■ Robotics Concepts

- Obstacle avoidance algorithms
- Motor drivers and basic robot kinematics

### ■ AI & Automation (Current Learning)

- Basic AI & machine learning concepts (applications, intelligent problem-solving)
- ROS (planned learning: robotics simulation and control)

### ■ Computer Science

- Data Structures & Algorithms (Beginner – currently learning)

### ■ Tools

- Arduino IDE
- VS Code
- Git/GitHub (beginner)

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## Projects

### Obstacle Avoidance Robot using Arduino

- Designed and built an obstacle avoidance robot using Arduino
- Integrated ultrasonic sensor for distance measurement
- Implemented control logic in C++ for autonomous navigation
- Gained hands-on experience with sensors, motors, and debugging

### ESP32-based Embedded System Project

- Programmed ESP32 using C++ for hardware control applications
- Worked with digital and analog inputs/outputs
- Developed understanding of microcontroller architecture and real-time behavior

### Python Mini Projects (Udemy Certified)

- Developed 10 small Python programs using loops and functions
- Strengthened logical thinking and problem-solving skills
- Completed beginner-level Python course with certificate

## Work Experience

### Operations & Inventory Assistant

Sync Saloon Pvt Ltd

Nov 2024 - Feb 2025

- Managed daily inventory data and stock records
- Tracked incoming and outgoing items using basic digital tools
- Improved stock accuracy through regular monitoring
- Assisted in organizing inventory workflows and process optimization

## Education

### Thakur College of Engineering and Technology

Mumbai, India

2025 - 2029 - Pursuing Bachelor of Engineering in Mechatronics Engineering