Dirgh Mehta

Mechanical Engineering Student with Interests in Design, Robotics and Automation in Industries

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SKILLS

- **Languages:** MATLAB
- **Design & CAD Tools:** SolidWorks
- **IoT & Automation:** Arduino, ESP32, Interfacing Sensors & Actuators, Industrial Automation Concepts, Serial Communication (UART/I2C/SPI)
- **Simulation & Control:** ANSYS

PROJECTS

Smart Parking System using ESP32
Project Lead

- Developed an IoT-based smart parking system to monitor real-time slot availability and calculate duration-based tolls.
- Integrated ultrasonic sensors and ESP32 microcontroller for automated data logging and wireless communication.
- Implemented cloud-based monitoring for user notifications and efficient space utilization.

Vibration Analysis using IoT
Research Project (Ongoing)

- Designing an IoT-enabled vibration monitoring system for predictive maintenance in rotating machinery.
- Using accelerometer sensors and microcontrollers to acquire real-time vibration data.
- Performing signal analysis and visualization using MATLAB for fault diagnosis.

Wankel Rotary Engine Model
Mechanical Design Project

- Designed a complete Wankel rotary engine model from scratch using SolidWorks.
- 3D-printed and assembled the prototype to analyze rotary motion and combustion chamber geometry.

Automated Hydroponic Farming System (Robofest)
Competition Project

- Proposed a smart hydroponic system integrating IoT sensors for pH, moisture, and nutrient monitoring.
- Developed an automation concept for precise water and nutrient control to improve crop yield efficiency.

EDUCATION

Pandit Deendayal Energy University (PDEU)   Gandhinagar, Gujarat
Bachelor of Technology in Mechanical Engineering   **Aug 2023 – May 2027 (Expected)**
CPI: 8.73 / 10.00 (up to 4th Semester)

- Minor specialization in Internet of Things (IoT) with focus on industrial automation and hardware integration.
- NPTEL Certification in Automation in Manufacturing.