Divyani Deshmukh

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EDUCATION

JSPM's Rajarshi Shahu College of Engineering   Pune, MH
Bachelor of Technology in Automation and Robotics   *Nov 2022 – Jun 2026*
- CGPA: 8.95

EXPERIENCE

Research Assistant − Dr. Pruthviraj D. Patil   Nov 2024 – Present
JSPM University   *Pune, MH*
- Conducted in-depth research on 10+ scalable technologies and patent requirements.
- Designed and refined 5+ 3D models using SolidWorks for research applications.
- Authored and structured 5+ patent documentation files, including detailed technical descriptions and comprehensive claims.

Web Developer − Codsoft   Aug – Sep 2024
- Generated a 100% responsive tribute page using HTML and CSS, enhancing user engagement.
- Built a full-stack Job Board platform, integrating React (front end) with Node.js (back end).
- Implemented CRUD operations and managed 100+ job listings using MongoDB.

Web Developer − Oasis Infobyte   Jul – Aug 2024
- Developed a dynamic landing page for Matka Chai using HTML and CSS.
- Coded a fully functional personal portfolio website, showcasing 5+ projects.
- Executed a multi-unit Temperature Converter using HTML, CSS, and JavaScript, processing instant conversions across 3 temperature scales (Celsius, Fahrenheit, Kelvin) with real-time accuracy.

PROJECTS

Maze Solving Robot | *STM32, Camera Module, Image Processing, Pathfinding Algorithm*   Feb 2024 – Present
- Refined an autonomous maze-solving robot using an STM32 microcontroller and a camera module for real-time image processing.
- Converted the live camera feed into a grid-based representation by segmenting maze walls and paths using contrast-based image processing.

Self-Heating Electric Bottle | *Rechargeable battery, Nichrome Heating, Bimetallic Thermostat*   Jan – Nov 2024
- Constructed a plug-in charging system at the base to store energy, enabling convenient use without continuous external power.
- Integrated a bimetallic thermostat to regulate temperature, ensuring safe and controlled heating.

Smart Watch | *Electromagnetic Induction, Copper Coil, Energy Harvesting*   Apr 2023 – Dec 2023
- Assembled a self-charging smartwatch utilizing Faraday's Law of Electromagnetic Induction to generate electricity from wrist motion.
- Integrated magnetic balls within a copper coil to induce an electric current, which is stored in a rechargeable battery.

Smart Irrigation System | *Soil Moisture Sensors, Microcontroller, Automated Watering*   Dec 2022 – Mar 2023
- Innovated an automated irrigation system using soil moisture and temperature sensors to monitor environmental conditions.
- Programmed a microcontroller to activate water pumps and valves when soil moisture drops below a threshold, optimizing water usage.

ACHIEVEMENTS

Automated Car Parking System | *Innovision 2024 − Second Runner Up*   April 2024
- Generated an Arduino-based parking system with IR sensors for real-time slot detection and display, improving efficiency, reducing congestion, and successfully deploying it in a nearby mall for practical use.

TECHNICAL SKILLS

Programming Languages: C++, Javascript, Python **Database:** MongoDB **Data Analysis:** Data Pipeline, Data Visualization **Collaboration Tools:** GitHub **Machine Vision:** Google Collab, RoboFlow, CNN **Microcontroller:** STM32, Arduino **Designing:** AutoCad, Robo Analyzer, Matlab, TIA Portal, Automation Studio, RoboDK **Automation System:** Hydraulics and Pneumatic System, Cobot Programming, PLC, CNC & VMC, 5 & 2 Station Modular Manufacturing System

CERTIFICATIONS

Introduction to Generative AI /

Crafting Creativity: A Product Designing Workshop / Introduction to MongoDB