Anjanikumar Dubey

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Profile

I'm a Mechatronics Engineering graduate with a strong foundation in system design, robotics, and embedded experimentation. My work spans interdisciplinary projects integrating mechanical design, electronics, and control systems. I thrive in research-driven environments where engineering meets real-world problem-solving. With strong communication and collaboration skills, I aim to contribute to experimental development, sensor integration, and technical coordination in robotics-focused projects.

Education

Thakur College of Engineering and Technology, 2021/12 – 2025/05
B.E. Mechanical and Mechatronics Engineering (Additive Manufacturing) 8.46 cgpa

Skills

Robotics tools — Matlab Simulimk | Arduino | ROS (Learning) | RoboAnalyzer (basics)

Technical Skills — Additive Manufacturing | Mechatronics | Mechanical Design | Automation | Embedded Systems | Renewable Energy Systems (Solar) | Electromechanical | Research | HMI design | Technical Writing

Softwares — Solidworks | Festo | Flash Print | Microsoft Office | Canva

Languages — Python (basics) | C++ (learning) | Html, Css (basics)

Soft Skills — Problem Solving | Public Speaking | Communication & Team Collaboration | Team Management | Project Management

Technical Experience

Team Lead, *Nirmaan Hyperloop* 2024/07 – 2025/06
Lead a Team of 35+ Engineering Minds to develop Mumbai's 1st Hyperloop Prototype. Represented in many National and International Conferences. Management of team, and driving the research further. Improved the team's stand by winning in GHC 2025. Mumbai

Projects

WePriSe Automation
Ideated an automated system for Weighing, Pricing, and Sealing (WePriSe) of grocery bags to reduce crowding in mart billing sections. Contributed to hardware design and built an embedded control unit using microcontrollers. Ideated the integration of real-time weight sensors with pricing logic and sealing mechanisms. Led the team presentation and secured selection in the institute round.

Hyperloop Prototype
Led the design and testing of a Hyperloop prototype. Directed the fabrication and integration of key propulsion components, including both Single and Double Sided Linear Induction Motors (DSLIM). Oversaw mechanical and electrical system integration for pod stability and frictionless motion. Represented the team at national and global Hyperloop conferences

HMI for Motor Control
Created a Human-Machine Interface (HMI) in MATLAB to visually monitor and control DC motor operation. Built a graphical UI for start/stop, speed control, and direction reversal. Enabled real-time data feedback and user interaction for basic industrial motor control simulations.

Fiber Optic Gyrocope
Engineered the embedded system for a prototype Fiber Optic Gyroscope to measure angular velocity. Connected the motor-driven fiber coil setup to photodetectors and interfaced them with an Arduino microcontroller. Solved hardware-software challenges related to noise, signal timing, and calibration for precise sensor output.

Bio-Battery
Generation of Energy using Microbes in the soil. When the microbes in the soil produce food for themselves they release energy. This project helped harness and use the energy. Worked on the cell connection and design part also on which diffrent combination of the electrodes should be taken.

Linear Induction Motors
Manufactured and tested Double sided and Single Sided Linear Inducion Motor for the frictionless propulsion of Hyperloop Prototype. Used the principle of Electromagnetic induction for propulsion.

Technical Achievements

Best Subsystem Award, *Global Hyperloop Competition (IIT Madras)* 2025/02

Special mention in Demonstration and Research, 2025/02
Global Hyperloop Competition (IIT Madras)

2nd Place at Janakalyan Hackathon, *IEEE Bombay (SIGHT Committee)* 2024/03

Dipex - 2023, *Dipex Exhibition cum Competition* 2023/04

Final Round of Aavishkar Reserach Convention, *Mumbai University* 2023/12

3rd Place Paper Presentation, 2022/11
IOT SIAC (Thakur College of Engineering and Technology)

Training / Certifications

Assistant Solar Panel Technician, *PMKVY, Skill India*
- Attended Training cum internship program in which basics of solar panel, it's installation process and basics of Solar and Renewable Energy. Attained a Level-3 Certification of the same.

Johnson & Johnson Robotics and Controls, *Johnson & Johnson MedTech, Forage*
- Diagnosed control inefficiencies in a surgical robotic arm using Python-based analysis tools and proposed design optimizations to improve response time and reliability.
- Delivered a professional design proposal with annotated technical visuals and simulation-backed recommendations, enhancing system durability and precision.

GE Aerospace Electrical Engineering, *GE Aerospace, Forage*
- Designed and troubleshot electrical distribution systems and avionics reliability under adverse conditions, applying circuit protection strategies and aerospace compliance standards.
- Created detailed design proposals and verification plans using simulation tools to assess environmental impacts, enhancing safety, documentation, and decision-making processes.

Project Management, *Siemens, Forage*
- Developed strategic KPIs and real-time dashboards using Excel to track and communicate progress on rail infrastructure projects.
- Applied analytical and problem-solving skills to address construction delays and stakeholder concerns, ensuring project alignment and momentum.

Agentic prompt engineering, *Ui Path*
- Completed hands-on training in AI prompt design for automation using UiPath’s agentic frameworks, focusing on context-aware, multi-step task automation strategies.

GE Aerospace Explore Engineering, *GE Aerospace, Forage*

- Evaluated alternative propulsion energy sources by analyzing cost, energy density, storage volume, and emissions; recommended optimal fuel types for next-gen aircraft systems.
- Researched bypass and compression ratio tradeoffs in turbofan design; delivered a technical presentation highlighting design constraints such as fan diameter, noise, material limits, and emissions.

Publications

Proposed Bio-Battery for Energy Generation, 2023/07
Journal of Emerging Technologies and Innovation Research (JETIR)
A publication of the research done for the Bio-Battery project.

Competitions & Workshops

Delivered Lecture on "Design of Induction Motor" at a workshop 2024/02
Delivered as a workshop speaker on Design of Induction Motor basics.

Attended Workshop on "Emerging Areas of EM applications" 2024/02
Workshop on Emerging areas in Electromagnetism known different fields and applications of EM also how the waves work and deeper into the topic.

Attended Workshop on Mechanical Design 2024/02
Attended a four hour workshop on mechanical design and it's aspect dimensions and how to read mechanical drawings.

Presented at Canadian Hyperloop Conference (known as Hyperloop Global) 2023/11
Presented at Canadian Hyperloop Competition (known as Hyperloop Global) as Propulsion lead of Nirmaan Hyperloop. Virtually showcased our propulsion system.

Organizations

The Robotics Society, *Member* 2022/09 – Present
Mumbai

National Service Scheme, *Volunteer* 2022/08 – 2023/07
Mumbai