PARTH KHARCHE

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OBJECTIVE

Mechanical Engineering undergraduate with a strong focus on robotics and system-level design. I work primarily on mechanical design, analysis, and prototyping of robotic platforms, while using ROS2 for simulation and system integration. Currently, I am building my foundation in deep learning to extend robotic systems toward perception and intelligent decision-making.

EDUCATION

Bachelor of Technology in Mechanical Engineering 2023 - 2027
Minors in Supply Chain Management
COEP Technological University, Pune. CGPA : 8.07

SKILLS AND INTERESTS

Robotics	C++, Python, ROS2, OpenCV, ESP32, Arduino, Raspberry Pi, Sensor Integration & Fusion
Mechanical	CAD, Mechanism Design, 3D Printing, ANSYS, Prototyping, Manufacturing, Mechanical Assembly
Soft Skills	Presentation, Team work, Cross team collaboration, Time Management, Team Management

PROJECTS

Robocon 2025 – Basketball Robots September 2024 – July 2025
Designed stable base drive and jump mechanisms; executed rapid prototyping and manufacturing of competition robots.

SPOT-Inspired Quadruped Robot [Link] Jan 2024 – Mar 2024
Designed a quadruped robot in SolidWorks with emphasis on stability, modularity, and terrain adaptability.

Swerve Drive Design [Link] Feb 2025 – Mar 2025
Designed and simulated an omnidirectional swerve drive with a custom planetary gear mechanism.

INTERNSHIP/EXPERIENCE

Social Internship : KARIGAR - School of Applied Learning, Pune. May 2024 - June 2024
Technical Team Member in ROBOT STUDY CIRCLE, COEP TECH. September 2024 - July 2025

POSITION OF RESPONSIBILITY

Technical Team Member in ROBOT STUDY CIRCLE, COEP TECH. September 2024 - July 2025
Head of Design, Renewable Energy Club . January 2024 - September 2024

ONGOING RESEARCH / PROJECT

Integrated Planetary Gearbox and Sensor Feedback Design for Heavy-Duty Mobile Robots Dec 2025 – Present

Developing an industrial-grade swerve drive actuator with integrated gearbox, encoder, and feedback interfaces. Emphasis on reliable omnidirectional motion control, robustness, and real-world deployment under high load conditions.

Design of a 106:1 Hybrid Planetary–Cycloidal Actuator for High-Torque Applications Dec 2025 – Present

Designing a compact high-reduction actuator combining planetary and cycloidal stages to achieve high torque density with reduced backlash. Focus on mechanical design, load distribution, and manufacturability for industrial and mobile robotic systems.

CERTIFICATIONS

DD-ROBOCON'25, RoboAI - MyEquation, ROS2 - Odometry and Control, Johnson & Johnson - Robotics Simulation, Accenture - Strategic Consulting, OpenCV, Asia to Japan (Japanese Speaking Ability), JLPT N5, Aspire Leadership Programme

LANGUAGES

English, Hindi, Japanese [N4]