

ATHARVA GAVALI

Mechanical Engineering | Product Design & CAD | R&D Aspirant
Visharambag, Sangli, Maharashtra, India | +91 8485898093 | athravgawali@gmail.com

CAREER OBJECTIVE

Mechanical Engineering undergraduate seeking a Mechanical Engineering R&D Internship to apply strengths in mechanical product design, CAD modeling and engineering analysis. Experienced in translating design requirements into manufacturable CAD models, evaluating fluid mechanics and structural considerations and driving design optimization across UAV, propulsion, and pressure-vessel projects.

EDUCATION

Program	Institution / Board	%/CGPA	Year
B.Tech (Mechanical Engineering)	Walchand College of Engineering, Sangli	6.9/10 CGPA	2023 – Present
12th (HSC)	Bhimashankar Padalkar Jr. College	70.21%	2023
10th (SSC)	L.S.P.H & S.H School	82.6%	2021

TECHNICAL SKILLS

Mechanical Engineering: Mechanical/Product Design, Structural Design, Design Optimization, Material Selection, Engineering Drawings, Product Development

CAD: SolidWorks, AutoCAD

Simulation & Analysis: MATLAB, Ansys, Engineering Analysis, Fluid Mechanics

Programming: Python, Arduino (C/C++)

Hardware: Arduino, Raspberry Pi, ESP32

PROJECTS

Automatic Adaptive Rocket Nozzle with Variable Expansion Ratio Based on Altitude

Aug 2025 – Present

- Designing a mechanical rocket nozzle in SolidWorks that automatically adjusts expansion ratio in response to altitude-driven pressure changes, applying fluid mechanics principles to improve thrust and propulsion efficiency.
- Performing engineering analysis and MATLAB-based calculations of pressure distribution across altitudes to guide design optimization of nozzle geometry.

Pressure Vessel Design with Nozzles and Saddle Supports

Jan 2026 – Feb 2026

- Developed a 3D CAD model of a horizontal pressure vessel with nozzle and saddle-support configurations in SolidWorks for conceptual industrial product design.
- Applied mechanical design and structural design principles, including material selection and engineering drawing preparation, to support manufacturability and design documentation.

Factors Affecting Rocket Performance in Atmosphere

Jan 2025 – Apr 2025

- Conducted engineering analysis of atmospheric factors—air density, temperature, pressure, and wind effects—on rocket flight performance using fluid mechanics, heat transfer, and thermodynamics principles.
- Interpreted performance data through a structured research methodology to identify key design-relevant relationships for propulsion systems.

Modular Reconfigurable Unmanned Aerial Vehicle (UAV)

Dec 2024 – Jan 2025

- Designed and developed a modular, reconfigurable UAV using CAD modeling and assembly design, enabling rapid reconfiguration for surveillance, delivery, and disaster-management missions.
- Focused on lightweight structures and modular assemblies to support design optimization, reduced cost, and improved product development efficiency.

CERTIFICATIONS

- MATLAB Onramp – MathWorks: official training covering MATLAB fundamentals, data visualization, scripting, and algorithm development.

POSITIONS OF RESPONSIBILITY

Robotics & Automation Head, Team Vulcan Robotics

Jun 2025 – Present

- Led design, development, and integration of robotic and automation systems, overseeing project execution, team coordination, and cross-functional engineering across mechanical, electronics, and control sub-systems.

ACHIEVEMENTS / AWARDS

- JEE Mains – 94.69 percentile
- MHT-CET – 98.45 percentile
- GATE 2026 Qualified – All India Rank 6655