KARTIK RAJU NAKADE

Mechanical Engineering Undergraduate (B.Tech)

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PROFESSIONAL SUMMARY

Mechanical Engineering undergraduate with good problem-solving and analytical skills. Built a basic understanding of manufacturing processes, production workflows, quality control, and engineering fundamentals through the academic projects and practical exposure. Quick learner with good communication and teamwork skills.

EDUCATION

Govt. College Of Engineering, Amravati ***2023-Present***
B.Tech in Mechanical Engineering *(CGPA-7.38)*

PROFESSIONAL SKILLS

- Presentation/Communication
- Analytical/Logical Thinking
- Teamwork & Collaboration
- Time Management
- Emotional Intelligence

TECHNICAL SKILLS

- Basic: SolidWorks, SolidEdge
- Microsoft Office 365 (Excel, PowerPoint, Word)
- Manufacturing Processes
- Measurement & Inspection

PROFESSIONAL EXPERIENCE

ME Summer Intern - Steel Authority Of India Limited(SAIL) Chandrapur Ferro Alloy Plant ***June 2026-August 2026***

- Completed rotational training across Mechanical Maintenance, Utilities, Central Workshop, Furnaces, and Material Handling divisions.
- Analyzed preventive maintenance workflows, overhauls, and alignments for pumps, gearboxes, belt conveyors, and EOT cranes
- Evaluated auxiliary industrial utilities, including closed-loop cooling water networks, hydraulic power packs, and gas cleaning plants (GCP).
- Gained hands-on exposure to workshop fabrication and machining operations, such as lathe turning, milling, and welding of replacement components.

Mechanical Team Member - Robo-Tech Forum (Govt. College Of Engineering, Amravati) ***November 2023 - Present***

- Designed and fabricated mechanical components and robotic mechanisms using CAD tools.
- Worked with motors, gears, shafts, bearings, linkages, and actuators for robot development.
- Gained hands-on experience in manufacturing, assembly, testing, and troubleshooting.
- Participated in ABU Robocon, a national-level robotics competition, as a Mechanical Team Member.

PROJECTS

Harmonic Drive Mechanism (Minor Project) | GCOEA ***February 2026-May 2026***

- Designed and developed a Harmonic Drive mechanism for high-ratio speed reduction and precise motion transmission.
- Analyzed gear ratio, torque transmission, efficiency, and stress distribution for performance evaluation.
- Developed CAD models and 3D-printed components using the AICTE IDEA Lab, GCOEA facilities.
- Built and demonstrated a stepper-motor-driven prototype for precision motion control.

Optimization of Crushing Circuit & Plant Modernization | SAIL CFP ***June 2026- August 2026***

- Diagnosed causes for high ferroalloy fines (15%) and low prime lump yield (85%).
- Optimized jaw crusher Closed Side Setting (CSS) to 42–45 mm to lower fines to ~10%.
- Proposed a Toothed Double Roll Crusher and hydraulic rock breaker for single-pass shear.
- Projected a prime yield (10–50 mm) increase to 92–94% (+80 TPD recovery).

Design & Fabrication Of Cold Storage | GCOEA ***September2026-Ongoing***

- Designing a portable, compressor-free medical cooling box using a TEC1-12706 Peltier module.
- Implementing automated temperature control via a W1209 digital thermostat.
- Configuring an off-grid 12V SMPS and 3S4P Li-ion battery backup with BMS protection.
- Optimizing thermal insulation using PU foam, 3 mm acrylic, dual fans, and heat sinks.

CERTIFICATIONS & WORKSHOPS

- **E-SUMMIT 2025(IIT MADRAS)** : Rank participant in Stocks Are High Comptition Organised by IIT Madras.
- **SIEMENS DIGITAL INDUSTRIES SOFTWARE** : SOLID-EDGE Associate Level Certification.
- **DASSAULT SYSTEMS SOFTWARE** : SOLIDWORKS Additive Manufacturing Associate Certification.
- **MCED** : Completed Entrepreneurship Awareness Programme Held At GCOE, Amravati.
- **LARSEN& TUBRO (L&T)** : Participated in CreaTech 2024.

ACHIEVEMENTS

- **Patent Filed (Pending)**: Novel design and prototyping of a zero-backlash Harmonic Drive Mechanism fabricated via AICTE Idea Lab.
- **Cleared UPSC NDA & NA Examination (II) 2022**: Qualified for the Services Selection Board (SSB) interview.

EXTRA CURRICULAR ACTIVITIES

- Indian Society For Technical Education (ISTE) Treasurer (2025 - 26)
- Class Representative (2023-24)
- Convenor (Prajwalan 2023-24)