Dhruv Kanade

Mechanical Engineering Student

+91-7058119105 — dhruvkanade123@gmail.com — linkedin.com/in/dhruvkanade19

SUMMARY

Mechanical engineering student with practical experience in lean manufacturing, CAD/CAE design, and renewable energy systems. Skilled in process optimization, FEA, and Python-based data analysis. Demonstrated ability to deliver results: contributed to a **3rd place** Formula Bharat finish, improved production speed by **2–3%** through lean solutions, and designed a wheelchair-to-bed conversion system achieving a **20-second** transformation time.

EDUCATION

Bachelor of Technology in Mechanical Engineering
Manipal Institute of Technology, Manipal, Karnataka 2023 - 2027

EXPERIENCE

Lean Manufacturing Intern - Forbes Marshall Jun 2025 - Jul 2025

- Conducted **Value Stream Mapping (VSM)** for fabrication processes, identifying bottlenecks and improvements
- Helped achieve an increase of **2–3%** in process speed through lean-based solutions
- Performed ergonomic assessments using REBA to reduce posture-related inefficiencies
- Supported implementation of **5S, Kanban, Poka-Yoke** and **JIT** with cross-functional teams
- Assisted in designing fixtures for the Compact Module Thermodynamic Steam Trap (CMTD)

PROJECTS

Structural Engineer - Formula Manipal Apr 2024 - Mar 2025

- Contributed to race car design that achieved **3rd place** at Formula Bharat
- Reduced chassis weight to **35 kg** while addressing battery pack integration challenges
- Designed and analyzed structural components using **CATIA V5 and Fusion 360**
- Performed FEA with **HyperMesh** and **ANSYS**, including composite simulations with ANSYS ACP

Savonius Wind Turbine & Wind Resource Analysis - Ongoing

- Designed a vertical-axis Savonius wind turbine optimized for low wind speeds (**3-5 m/s**) for urban applications
- Trying to achieve **10% improvement** in torque output through **CFD (ANSYS)**-optimized blade geometry
- Optimized turbine design for low wind speed performance and manufacturability
- Cleaned and analyzed a real-world wind energy dataset from Tamil Nadu, India
- Used Python (Pandas, Matplotlib) to preprocess and visualize wind speed, direction, and power density

Wheelchair-to-Bed Conversion Mechanism - Ongoing

- Designed a mechanically actuated wheelchair-to-bed conversion system achieving transformation in **under 20 seconds**.
- Developed linkage mechanisms, actuator selection criteria, and system-level layouts.
- Focused on ergonomics, stability, safety factors, and real-world usability.
- Will be conducting user testing with feedback indicating improved ease of use and patient comfort.

TECHNICAL SKILLS

- **CAD/CAE:** CATIA V5, Fusion 360, ANSYS (incl. ACP, Structural, CFD, Thermal), HyperMesh
- **Lean Tools:** VSM, REBA, 5S, Kanban, Poka-Yoke, JIT
- **Programming:** Python (Pandas, Matplotlib, NumPy), MATLAB
- **Other:** FEA, Composite Analysis, Generative Design

CERTIFICATIONS

- Generative Design for Additive Manufacturing - Coursera (2025)
- Programming for Everybody (Python) - Coursera (2025)
- Major Engineering Project (3-course series) - Coursera (2025)

EXTRACURRICULARS & LANGUAGES

- **Extracurriculars:** REDX and Edboard Member, Cultural Committee, MIT Manipal
- **Languages:** English, Hindi, Marathi