VALLABH PREMENDRA KHANDAGALE

Mechanical Engineering Student | Design & Development | Manufacturing Operations & Assembly

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LinkedIn | Portfolio

PROFILE SUMMARY

Mechanical Engineering undergraduate (2027) combining product design and shop-floor manufacturing exposure. On the design side: CAD modelling in CATIA V5 and SOLIDWORKS, ANSYS structural validation, 3D-printed prototyping, and testing, built as Design Head of a national-level SAEINDIA TIFAN team. On the operations side: work measurement using MOST, motion study, and standard-time analysis across machining, assembly, paint shop, SIP, and PDI operations during an industrial internship at Allison Off-Highway Drive & Motion Systems. Seeking a Graduate Engineer Trainee role to build depth across the full product lifecycle, from design and prototyping to precision manufacturing, assembly, and plant operations.

EDUCATION

Pimpri Chinchwad College of Engineering and Research (PCCOER), Pune **2023 – 2027**
Bachelor of Engineering — Mechanical Engineering | CGPA: 8.6 | 78.60%

Walchand College of Arts and Science, Solapur **2021 – 2023**
HSC — Science | 59.33%

Haribhai Devkaran High School, Solapur **2021**
SSC | 93.60%

EXPERIENCE

Allison Off-Highway Drive & Motion Systems, Chakan **Jan 2026 – Feb 2026**
Project Trainee — Production & Industrial Engineering

- Applied **MOST (Maynard Operation Sequence Technique)**, motion study, and work-sequence analysis to determine standard times for industrial production activities.
- Gained shop-floor exposure to **machining, assembly-line operations, paint shop, SIP, and Pre-Delivery Inspection (PDI)** for industrial drive and motion systems.
- Observed manufacturing workflows, material movement, and operator activities to understand operational efficiency and workflow-improvement opportunities.

Team Sonic Diggers — SAEINDIA TIFAN 2026 | PCCOER **Aug 2024 – Apr 2026**
Design Head (Phase 2) | Mechanical Design, Manufacturing & Conveyor Team (Phase 1)

- Contributed to the **complete product development cycle**, including mechanical design, fabrication planning, manufacturing coordination, assembly, testing, and technical presentations for an agricultural transplanting system.
- Designed conveyor assemblies and a tray-locking mechanism using **CATIA V5 / SOLIDWORKS** and prepared engineering drawings to support fabrication and assembly.
- Coordinated **prototype fabrication, component fitment, mechanical assembly, and subsystem integration**, supporting functional testing and iterative design improvements.
- Used **ANSYS structural analysis** to evaluate component strength and support design validation and refinement.
- Prepared and presented technical designs, engineering decisions, project progress, and validation results during competition evaluation rounds.
- Collaborated with multidisciplinary team members to resolve design and manufacturing challenges, maintain technical documentation, and meet project milestones.
- Team secured **AIR 7 Overall**, Design Round Rank 6, POC Round Rank 7, and Pitch Master Award – Runner-up at SAEINDIA TIFAN 2026.

Altair — Pune **Jan 2025 – Mar 2025**
Conceptual CAE Design & Simulation Virtual Internship

- Completed with an **Outstanding Grade**; used **Altair Inspire** for simulation-driven design, virtual prototyping, and structural validation.

Industrial Automation Virtual Internship — AICTE–EduSkills **Jun 2026 – Aug 2026**
8-Week Virtual Internship

- Built working knowledge of PLC programming, control systems, sensors, and actuators used in industrial machinery.

PROJECTS

Differential Spur Gear Model — 3D Printing **Feb 2025**

- Designed a differential spur gear mechanism in CAD and fabricated it via 3D printing; tested operation, assembly fit, and performance against design intent.

Study & Implementation of MOST **Jan 2026 – Feb 2026**

- Applied the MOST/PMTS work-measurement methodology to analyze manual operations and determine standard time using **Microsoft Excel**.

Digital Mono-Dimension Measuring Machine **Jan 2024**

- Developed a non-contact ultrasonic sensor-based measurement system using Arduino Uno for real-time length and height measurement; analyzed test data for accuracy.

SKILLS

Design & Development: CATIA V5, SOLIDWORKS, Creo, AutoCAD, 3DEXPERIENCE, Engineering Drawings, Mechanism & Conveyor Design, 3D-Printed Prototyping

Analysis & Validation: ANSYS Workbench (Structural Analysis), Altair Inspire, Prototype Testing, Functional Validation

Manufacturing & Operations: MOST, Work Measurement, Motion Study, Standard-Time Analysis, Machining & Assembly Processes, Shop-Floor Observation, Metrology Basics, Lean Manufacturing, 5S, Kaizen

Engineering Tools: Microsoft Excel, Power BI, Technical Documentation, Python & MATLAB (basic)

Coursework Exposure: GD&T, DFM/DFA, Quality Engineering, Production Planning, Project Management

CERTIFICATIONS

- 3DEXPERIENCE Mechanical Designer — Associate; SOLIDWORKS Additive Manufacturing Associate; SOLIDWORKS PDM Associate — Dassault Systèmes
- Inspire Structures Professional Certification — Altair
- Industrial Automation Virtual Internship — AICTE–EduSkills
- AI Dashboards using Microsoft Power BI — Skill Nation; Introduction to Programming Using Python — NIELIT

ACHIEVEMENTS

- **AIR 7 Overall | Design Rank 6 | POC Rank 7 | Pitch Master Award – Runner-up**, SAEINDIA TIFAN 2026 — Team Sonic Diggers.
- District-level achievement in Drawing; Elementary & Intermediate Drawing Examinations

VOLUNTEERING

SAEINDIA — TIFAN Event **Oct 2025**

Stage Management & Event Design Volunteer

- Coordinated technical sessions and event logistics with organizers, technical teams, and participants under time pressure.

ANSYS Workbench Hands-on Workshop — PCCOER **Apr 2025**

- Volunteered in coordination and participant support for a 2-day workshop.