

VARAD PRAMOD LAD

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EDUCATION

Master of Science in Mechanical Engineering

Arizona State University, Tempe, USA

Graduating May 2024

(Open to relocation)

Bachelor of Technology in Mechanical Engineering, Minor: Design

Sanjay Ghodawat University, India

May 2022

TECHNICAL SKILLS

Design & Modeling Tools: CATIA, SolidWorks, AutoCAD, Autodesk Revit, Creo, Fusion 360, Arduino, Siemens NX, eQuest, ANSYS (FEA)

Programming & Analysis tools: Python, MATLAB, Arduino, CNC coding, G code, SAP HANA, JMP

WORK EXPERIENCE

Marketch International Corporation, USA: Mechanical Engineer Intern, Project: TSMC Fab 21

June 2023 – Aug 2023

Tool Hookup – Interconnect:

- Worked with the Tool Hookup – Interconnect team on **TSMC FAB 21**, North America's largest semiconductor manufacturing fab facility, and assisted the Superintendent in tracking and managing the semiconductor tools in 4 different departments.
- **Installed and troubleshoot** over 50 semiconductor tools in compliance with regulatory standards, ensuring operational safety, and strictly following **cleanroom protocols** by wearing PPE and completing all required gowning procedures.

BIM Modeler:

- Assisted the Building Information Modeling (BIM) team in designing electrical and HVAC system models for Fab 21 cleanroom facilities and levels throughout the fab using **Autodesk Revit**.

Material and Warehouse Management:

- Implemented a **real-time tracking system** and documented the shipment of over **300 semiconductor tools** from Taiwan to MIC, USA warehouses, ensuring accurate logistics transparency and maintaining detailed inventory records.

Chemtech System Marketing, India: Production and Supply Chain Intern

Dec 2021 – May 2022

- Led a team of 6 engineers to analyze material and tools operated during production processes.
- Applied **Lean Six Sigma** methodology principles to streamline quality control procedures, resulting in a 24% decrease in operational costs, increased profit margin, and supply chain efficiency.

Chemtech System Marketing, India: Test Engineer Intern

June 2021 – Aug 2021

- Performed root cause analysis and launched new cane-cutting knives by modifying their design using **SOLIDWORKS**.
- Reengineered the angles of cutting blades to improve the cutting operation by 80% and reduce power consumption by 75%.

Formula SAE SUPRA, India: Head of Chassis Team

Aug 2020 – June 2021

- Led a team of 25 students to design and model a Formula-1 car using a **CAD tool** and finite element analysis (**FEA**) in **ANSYS**.
- Optimized the chassis of a Formula-1 car and its components to satisfy a 280-kilogram weight requirement and competed against 119 international universities, ranked 2nd in the acceleration test and 14th overall.

Menon Piston Limited, India: Production Engineer Intern

May 2018 – June 2018

- Tested prototypes of TATA automotive piston rings and performed research on the build fixtures used in daily production, equipment specifications, and layout design on all workstations at 3 fast-paced advanced production facilities.

PROJECTS

Optimizing Factors & Effects in Pour-Over Coffee Brewing with Design of Experiment

Sept 2022 – Nov 2022

- Considered a 2k factorial design of **DOE** and ran an experimental design comparison using **JMP** software.
- Conducted taste tests survey to identify critical response variables: grinding beans for 16 seconds, 16:1 water-to-coffee ratio, 3 minutes brewing at 205 Fahrenheit, 30 seconds blooming maximizes the subjective appeal of coffee for customers.

Advanced Automatic Packaging Machine with PLC Control

Jan 2020 – Apr 2020

- Designed an automatic paper wrapping machine in **SolidWorks**, tested 3 prototypes, and utilized an automation control system and PLCs to reduce physical labor by 70%, increase packaging productivity by 25%, and decrease waste by 75%.

Industrial-Grade Brick-Making Machine for Small-Scale Industries

Feb 2019 – May 2019

- Developed a **CAD model** using **CATIA** and launched a Brick Making Machine for small-scale industries, reducing labor requirement from 6 workers per brick to 2 workers, and reducing cycle time from 16 minutes per brick to 5 minutes per brick.

OTHER WORK EXPERIENCE

Arizona State University, USA: TA/GSA Grader: Statistics, System Dynamics, and Controls

Sept 2022 – Present

- Formulated and graded 180+ undergraduate students' assignments, quizzes, and exams according to the university level.

NASA, USA: L'SPACE Workforce Development Program Trainee

Aug 2022 – Dec 2022

- Operated as project inspector, executed designs in Siemens NX, and collaborated weekly with **NASA** Marshall Chief Technologist.