Jatan Rajen Pandya

Illinois, United States | jatan.pandya2410@gmail.com | (919)-559-5842 | LinkedIn | Portfolio

Mechanical Engineering Professional specializing in Design & Manufacturing. Experienced in corporate collaborations, design enhancement, and efficiency optimization. Proficient in cross-functional teamwork and applying expertise to industry challenges.

EDUCATION

North Carolina State University **August 2023 – May 2025**
Master of Science in Mechanical Engineering GPA – 3.4/4.0
Coursework – Engineering Design Optimization, Precision Manufacturing System, Design of Electromechanical Systems, Automotive Power Systems, Finite Element Analysis, Lean Six Sigma, Product Design.

K J Somaiya College of Engineering, Mumbai, India **August 2019 – July 2023**
Bachelor of Technology in Mechanical Engineering GPA 3.3/4.0
Coursework – Strength of Materials, Thermodynamics, Production Engineering, CFD, Fluid Mechanics, Material Science & Metallurgy.

TECHNICAL SKILLS

Softwares/tools: Solidworks, Mastercam, Creo, Ansys, AutoCAD, JMP, Simulink, Autodesk Fusion 360, DFA, Product design.
Prototyping: CNC machining, 3D printing, Soldering, CAD, CAM.
Quality Assurance: GD&T, DFM, Tolerance Stack up, DFMEA, FEA.
Programming: Matlab, Python
Certifications & Training: Certified Solidworks Professional in Mechanical Design, Matlab Onramp, SMC Pneumatic Training-1.

WORK EXPERIENCE

ABH Manufacturing Inc. | *Engineering Associate-1* | **Illinois, United States** **June 2025 - Present**

- Designed an SFIC housing and locking to integrate in an Emergency Release Stop, compliant with OMH's Anti-Ligature standards.
- Leading development of a stainless steel, non-handed, top-latching glass panic device, targeting UL305 fire safety certification.
- Modifications of a Self-Closing Heavy-Duty Spring Hinge for ease of assembly and appropriate clearances.
- Conducted quality control inspections, including First Article Inspection and generation of Non-Conformance Reports for vendor-supplied components.

Precision Engineering Consortium | *Research Intern* | **MAE Department, NC State** **September 2024 – Present**

- Development of a precise and repeatable method for on-machine measurement of lens geometry and thickness for Meta Platforms Inc. using a chromatic confocal probe.
- Programming of G-Codes for CNC measurement device and utilizing the co-ordinates data for surface mapping on Matlab.

Burlington Fabrics (Elevate Textiles) | *Industry Project* | **North Carolina, United States** **September 2024 – December 2024**

- Implemented Lean Six Sigma DMAIC methodology to optimize fabric production workflow, utilizing statistical process control (SPC) to identify critical defects and variances.
- Generated Pareto analysis and Fishbone diagrams for root cause identification of SKU processing delays.
- Performed statistical analysis using JMP software to define control limits (UCL/LCL) and process capability metrics for SKU throughput optimization.
- Proposed data-driven process improvements resulting in 25% reduction in expedited shipping costs, saving $11,000 annually.

Saliba Industries Inc. | *Mechanical Engineering Intern* **| Illinois, United States** **June 2024 – August 2024**

- Programmed 3-axis CNC toolpath using Mastercam for tight tolerance components and performed on-floor machining operations on a Fadal VMC.
- Reduced cycle time by 35% per operation by optimizing tooling and feed rate without sacrificing tool life and precision.
- Reverse-engineered components to 3D CAD models on Solidworks for manufacturing, drafted 2D drawings for high volume production (600 units) and inspection, adhering to ISO GD&T standards.
- Performed quality checks using caliper, micrometer, height gauge, etc. and created a thorough in-process inspection report.

PROJECTS

AI-Based Manufacturing System for Production Optimization and Cost Reduction **November 2023 – December 2023**

- An AI based tool for prediction of manufacturing failures in a CNC machine.
- Data extraction of performance parameters such as spindle speed, co-ordinates, feed rate etc., of a Haas VF2 CNC machine by set of Q-Codes through connecting to a telnet server on python.
- Analyzed data to determine suitable tooling, evaluate machining efficiency, and predict in-process failures to reduce downtime.

Team ETA (*Student Mega – Project)* | Shell – Eco Marathon **May 2021 – November 2022**

- Designed and FEA-optimized an aluminum enclosure for an electric hub motor, leveraging CAD and FEA to develop a 20% lighter case without sacrificing its strength.
- Applied Ecocal software for precision engine tuning across varied air-fuel ratios, optimizing combustion dynamics and enhanced efficiency resulting in an 11mpg increase.
- Performed Carbon fiber layup simulation on Ansys ACP and carried out stress analysis for a monocoque vehicle body.
- Created a suspension geometry of a Double Wishbone system for a 4 wheeled car.