Lakshya Tiwari

Round Lake, IL (C) 480-401-9636 (E) lakshyatiwari98@gmail.com | GitHub | Portfolio

Professional Summary

Results-driven Mechanical Engineer with expertise in advanced materials, mechanical design, and simulations. Specializing in product innovation, research, and development, proficient in CAD tools (Creo, SolidWorks, ANSYS) and programming (Python, MATLAB). Experienced in designing and optimizing complex systems, with a strong focus on sustainability and efficiency. Adept at leading cross-functional teams, managing design documentation, and driving projects from concept to production, delivering innovative and reliable engineering solutions.

Experience

BCVS Group Inc. (Contract) **Austin, TX**
Mechanical Engineer **September 2023-Present**

- Led 10+ test protocols, IQ/OQ/PQ validations, and method validations for fixtures, gauges, and assemblies, ensuring compliance with FDA 21 CFR 820 and ISO 13485 design controls.
- Managed Design History Files (DHF) and product documentation in PLM software, ensuring adherence to ISO 13485, ISO 14971, and FDA 21 CFR 820 for product lifecycle management and regulatory audits.
- Applied DFMEA & PFMEA methodologies to mitigate design risks and enhance product safety, reliability, and performance, ensuring compliance with regulatory requirements.
- Developed and reviewed detailed design drawings, prototypes, and GD&T principles, ensuring manufacturability, assembly integrity, and compliance with engineering standards for medical devices.
- Executed test method validations (TMV) and gauge R&R studies using Minitab and Excel, improving measurement accuracy and optimizing process control for product consistency.
- Implemented Design for Manufacturing (DFM) and Design for Assembly (DFA) principles, optimizing part fabrication and assembly processes to streamline production and reduce manufacturing costs.

Solinst Canada Ltd. **Tempe, AZ**
Mechanical Engineer **June 2023-August 2023**

- Engineered mechanical packer components in SolidWorks, ensuring functionality and form through iterative modeling, prototyping, and testing to meet project specifications.
- Produced 3D models and prototypes in SolidWorks, ensuring manufacturability and adherence to project specifications while maintaining product quality standards.
- Conducted CFD simulations in ANSYS to optimize performance, structural integrity, and product reliability, improving efficiency and functionality to meet project requirements.

Manufacturing Innovation Lab **Tempe, AZ**
Research Assistant **October 2023-August 2023**

- Designed and developed thermoelectric molds using Aqua Gray 4K resin and Sonic Mini 4K printer, optimizing Sb2Te3 material processing through advanced grinding, filtration, and resin curing with 0-3% PEDOT: PSS, enhancing conductivity and material properties through 10 iterations and microscopic scanning.
- Improved material density and performance by applying heat pressing and sintering, followed by TGA testing, ensuring precise thermal analysis and optimized mechanical properties.
- Simulated copper deposition on 3D-printed conductive films using COMSOL, conducting SEM and EDS analysis to refine fabrication techniques, improve structural consistency, and enhance material reliability.

Air India Ltd. **Mumbai, IN**
Intern **May 2018-July 2018**

- Overhauled PW4056 compressor modules and enhanced CFM56 combustion chambers, significantly improving operational efficiency, performance, and reliability of critical engine components.
- Conducted detailed inspections of GE-90 engines using advanced NDT techniques and collaborated with AMEs on overhauls, ensuring compliance, safety, and comprehensive maintenance documentation.

Technical Skills

- **Languages**: MATLAB, Python
- **Design & Analysis Tools**: AutoCAD, SOLIDWORKS, CATIA V5, Fusion 360, Revit, Creo, Siemens NX, ANSYS, COMSOL, Abaqus, GD&T, Origin, EndNote, CHITUBOX, JMP, Minitab, PTC Windchill, LabView, GD&T
- **Certification**: Autodesk CAD/CAM/CAE for Mechanical Engineer, Six Sigma Green Belt, Robotics, Digital Manufacturing & Design Technology, Autodesk Generative Design, CAD and Digital Manufacturing

Education

Arizona State University, Tempe, AZ
Master of Science: Aerospace Engineering **Aug 2021-May 2023**

- Relevant Graduate Coursework in Linear Algebra in Engineering, Polymers & Composites, Modern Manufacturing Methods, Applied CFD, Design Optimization, Probability & Reliability, Thesis.

SRM Institute of Science & Technology (KTR), Chennai, India
Bachelor of Science: Aerospace Engineering **August 2016-May 2020**

- Relevant Undergraduate Coursework in Applied Structural Mechanics, Vibrations & Elements of Aeroelasticity, Applied Solid Mechanics, Material Science, Flow Visualization Techniques, Thermodynamics, Applied Engineering Mechanics.