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) **Round Lake, IL**
Principal Engineer **Sept 2023-Present**

- Applied advanced technical principles to oversee design, testing, and quality assurance activities, streamlining processes to enhance product quality, reliability, and regulatory compliance.
- Led 10+ test protocols and method validations for mechanical devices, ensuring robust and precise testing accuracy for fixtures, gauges, and assemblies to meet quality standards.
- Managed comprehensive Design History File (DHF) documentation using PLM software, ensuring full compliance with 21 CFR 820, ISO 13485, ISO 14971, and other quality management standards for regulatory audits.
- Supported DFMEA, PFMEA, IQ, OQ, PQ, Risk Management, and NPI processes to ensure product safety, risk mitigation, and adherence to quality and regulatory requirements.
- Created 10+ detailed design drawings in Creo and developed fully functional prototypes, driving innovation and advancing product development through various critical stages.
- Implemented advanced quality initiatives such as GD&T, SPC, and Six Sigma methodologies to optimize manufacturing processes, reduce defects, and improve overall product performance.

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

- Designed and validated mechanical packer components in SolidWorks, ensuring form, fit, and function through iterative modeling and testing.
- Developed 3D models and prototypes in SolidWorks, ensuring design accuracy and meeting project timelines.
- Performed advanced CFD simulations in ANSYS to optimize design performance, enhancing efficiency, structural integrity, and overall product reliability.

Manufacturing Innovation Lab **Tempe, AZ**
Research Assistant **Oct 2021-May 2023**

- Designed thermoelectric Molds using Aqua Gray 4K resin and Sonic Mini 4K printer, processing Sb_2Te_3 material through grinding and filtration for optimized performance.
- Increased material density by heat pressing at 100°C/200°C with 500N/1000N pressures, followed by sintering at 400°C and TGA testing for precise evaluation.
- Optimized resin curing with 0-3% PEDOT: PSS, performing 10 iterations and microscopic scanning to enhance conductivity and resin properties.
- Simulated copper deposition on 3D-printed conductive films using COMSOL, conducting SEM and EDS analysis to improve fabrication and ensure consistent material properties.

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.