# Lakshya Tiwari

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## Professional Summary

With expertise in advanced materials, mechanical design, and simulations, I specialize in product innovation, research, and development, leveraging skills in CAD, simulation tools, and programming, including Python and MATLAB.

## Experience

**BCVS Group Inc. (Contract at Baxter)** **Round Lake, IL**
**R&D Mechanical Engineer** **Sept 2023-Present**

- Applied advanced technical principles to oversee design, development, testing, and quality assurance, streamlining processes and enhancing product quality.
- Led 10+ test protocols and test method validations for mechanical devices, including fixtures and gauges, ensuring robust and accurate testing processes.
- Managed extensive Design History File (DHF) documentation using Product Lifecycle Management (PLM) software, maintaining compliance and traceability.
- Supported DFMEA, PFMEA, IQ, QO, PQ, Risk Management, NPI, CO, and MCO processes, ensuring product excellence and regulatory compliance.
- Created 10+ design drawings in Creo and developed prototypes to advance product development through various stages, contributing to innovation and refinement.

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

- Designed and tested mechanical packer components for boring hole applications using SolidWorks, validating 3D models for form, fit, and function across multiple design iterations.
- Developed detailed 3D models and prototypes, ensuring design accuracy and functionality while meeting project requirements and timelines.
- Conducted CFD simulations to optimize designs, enhancing efficiency and performance.
- Collaborated with cross-functional teams on a commercial design project, contributing to product development and refinement.

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

- Conducted research on thermoelectric materials and polymer-metal composites, focusing on innovative fabrication and testing techniques.
- Designed and fabricated Molds for $Sb_2Te_3$ materials, enhancing density through heat-pressing and sintering for thermoelectric applications.
- Optimized resin compositions with PEDOT: PSS, improving material properties through curing, microscopic analysis, and computational simulations using COMSOL.
- Analysed copper deposition on 3D-printed films using COMSOL, SEM, and EDS, validating tensile strength, conductivity, and fabrication techniques.

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

- Overhauled and assembled the compressor module of PW4056 engines, improving operational efficiency and performance, and enhanced the combustion chamber of CFM56 engines, boosting performance.
- Inspected GE-90 engines using Non-destructive Testing (NDT) techniques to detect and address hidden defects, ensuring airworthiness and compliance with aviation standards.
- Collaborated with Aircraft Maintenance Engineers (AMEs) to execute comprehensive engine overhauls, adhering to safety protocols and regulatory requirements while maintaining detailed documentation of all maintenance activities.

## Technical Skills

- **Languages**: MATLAB, Python
- **Design & Analysis Tools**: AutoCAD, SOLIDWORKS, CATIA V5, Solid Edge, Fusion 360, Revit, Ansys, COMSOL Multiphysics, Creo, Siemens NX, Abaqus, Origin, EndNote, CHITUBOX, JMP, Minitab, Keyshot
- **Certification**: Autodesk CAD/CAM/CAE, Six Sigma Green Belt, Robotics, Digital Manufacturing & Design Technology, Autodesk Generative Design for Manufacturing, Statistical Thermodynamics, CAD and Digital Manufacturing

## Education

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

- Relevant 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 2020-May 2016**

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