

# Lakshya Tiwari

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## Professional Summary

Dynamic Mechanical Engineer with expertise in advanced materials, mechanical design, and simulation. Highly skilled in CAD tools (SolidWorks, Creo, AutoCAD) and programming (Python, MATLAB). Proven track record in leading product development from concept through production, emphasizing efficiency, sustainability, and high-performance standards. Adept at managing design documentation, collaborating with cross-functional teams, and delivering innovative engineering solutions that meet regulatory requirements and exceed project expectations.

## Experience

### BCVS Group Inc. (Contract)

Austin, TX

#### Mechanical Engineer

September 2023-Present

#### Smith & Nephew

- Developed comprehensive mechanical design concepts and detailed 3D CAD models using SolidWorks, improving product functionality and structural integrity across 6+ product iterations.
- Partnered with cross-functional teams and suppliers to integrate DFM/DFA principles, reducing manufacturing costs by 18% and minimizing assembly inefficiencies.
- Applied GD&T to achieve high-precision components, enhancing manufacturability and assembly consistency, and reducing tolerance-related defects by 25%.
- Leveraged 3D printing and rapid prototyping to produce functional prototypes, accelerating design validation cycles by 30% and fostering hands-on innovation in early-stage development.
- Led design reviews and risk assessments throughout the development lifecycle, proactively identifying and mitigating potential failure modes, contributing to a 15% reduction in post-launch design changes.

#### Baxter

- Spearheaded R&D compliance efforts by maintaining accurate Design History Files (DHF) and supporting rigorous device testing, contributing to successful FDA submission and product launch.
- Oversaw product development processes, applying engineering principles to enhance design, quality assurance, and testing procedures, streamlining workflows and reducing development time by 20%.
- Managed PLM systems to maintain detailed BOMs, track change orders, and ensure version control, improving cross-functional collaboration and traceability.
- Authored and executed Test Protocols, TMVs, and Gauge R&R studies, validating critical fixtures and assemblies through structured DFMEA, PFMEA, and DMR analyses.
- Conducted FEA simulations, life cycle testing, and design reviews; implemented Six Sigma and Lean methodologies to improve product durability and cut quality issues by 22%.

### Solinst Canada Ltd.

Tempe, AZ

#### Mechanical Engineer

June 2023-August 2023

- Engineered mechanical packer components in SolidWorks, using iterative modeling and testing to meet complex performance and geometric requirements.
- Delivered 3D CAD models and functional prototypes, ensuring high-quality standards and manufacturability throughout the product lifecycle.
- Performed CFD simulations in ANSYS, leading to a 25% performance gain and improved system efficiency under operational loads.

### Manufacturing Innovation Lab

Tempe, AZ

#### Research Assistant

October 2021-May 2023

- Executed extensive research and data analysis across engineering experiments, applying advanced statistical methods to improve result accuracy and reproducibility.
- Designed and refined mechanical prototypes using CAD and engineering fundamentals, enhancing product functionality and supporting innovative research outcomes.
- Collaborated across disciplines to improve experimental methodologies, reducing setup times by 15% and increasing project throughput.

## Technical Skills

- Languages & Software:** MATLAB, Python, LabView, Minitab, Excel Macros, PLM software, LabVIEW
- Design & Analysis Tools:** AutoCAD, SOLIDWORKS, CATIA V5, Fusion 360, PTC Creo, Siemens NX, ANSYS, COMSOL Multiphysics, Abaqus, GD&T
- Certification:** Autodesk CAD/CAM/CAE for Mechanical Engineer, Six Sigma Green Belt, Digital Manufacturing & Design Technology, Autodesk Generative Design, CAD and Digital Manufacturing

## Education

Arizona State University, Tempe, AZ

Master of Science: Aerospace Engineering

August 2021-May 2023

SRM Institute of Science & Technology (KTR), Chennai, India

Bachelor of Science: Aerospace Engineering

August 2016-May 2020