

Ayush Priyadarshi

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EDUCATION

Master of Science in Mechanical Engineering

Arizona State University

Expected May 2025

Tempe, AZ, USA

- CGPA: 4.00/4.00
- Inducted into Tau Beta Pi ASU chapter for outstanding academic achievement
- Relevant course work: Advanced Material Characterization, Fundamentals of Semiconductor Packaging, Design of Engineering Experiments, Stress Analysis

Bachelor of Technology in Mechanical Engineering

Indian Institute of Technology (IIT), Ropar

May 2023

Punjab, India

- CGPA: 8.14/10.00
- Relevant course work: Additive Manufacturing, Analysis of Material Removal Processes, Manufacturing Technology - I & II, Manufacturing Lab, Engineering Workshop, Industrial Management, Data Structures, Calculus

TECHNICAL SKILLS

- Design and Manufacturing: SolidWorks, ANSYS, ABAQUS, AutoCAD, 3D Printing, CNC Programming
- Software: MATLAB, C++, Python, SQL, Excel (with Macros), JMP
- Engineering Practices: Total Productive Maintenance (TPM), Product Life Cycle Assessment (LCA), Ishikawa Diagrams
- Certifications: Certified SolidWorks Associate (CSWA), MATLAB Onramp (incl. Simulink & Simscape)

PROFESSIONAL EXPERIENCE

Manufacturing Intern

Trident Group Ltd

June 2022 - August 2022

Dhaura, Punjab, India

- Led a critical analysis project resulting in a 15% reduction in production delays by optimizing Cross Cutting Cross Hemming (CCCH) machines' efficiency through detailed root cause analysis and process improvements.
- Managed a team of 8 field technicians as a shift engineer, enabling real-time identification of bottlenecks and implementation of process improvements at a leading textile manufacturer.
- Enhanced quality control and operational efficiency using Total Productive Maintenance (TPM) methodologies including Ishikawa diagrams and the 5 Whys approach.

PROJECT EXPERIENCE

Optimization of Keyboard Typing Efficiency

February 2024 - April 2024

- Employed ergonomic research by applying designed experiments and ANOVA to evaluate impact of keyboard design and posture on typing performance.
- Utilized factorial experiments to isolate ergonomic impact of keyboard type, posture, and tilt on typing speed and accuracy.

Use of TEM in Carbon Nanostructure Characterization

February 2024 - April 2024

- Conducted in-depth review of cutting-edge research demonstrating TEM's critical role in analyzing atomic structure and defects of carbon nanostructures.
- Synthesized state-of-the-art findings from multiple journal papers, highlighting how HRTEM and in situ TEM help characterize nanostructure morphology and electrical properties respectively.

Development of Auxetic Structures for defense applications

August 2022 - May 2023

- Designed 3D geometries of different cell shapes (with negative Poisson's ratio) and simulated against boundary conditions of static loading for performance analysis leveraging SolidWorks and ANSYS.
- Performed Impact analysis of bullet impact and parametric study of cell size dimensions for optimum shape and size of unit cells yielding 1.5x better properties.

Automatic mold making technique for instant forming

January 2022 - May 2022

- Designed a prototype mold for plastic forming processes (extrusion); to change profile on demand using SolidWorks.
- Developed a python and an arduino program to automate profile creation from 3D geometry data and motion of underlying mechanism.

Protocol Analysis - Design Thinking

June 2021 - June 2021

- Conducted interviews and brainstorming sessions with individuals with/without product design experience to analyze process of design thinking in an environment of collaboration.
- Performed analysis of data on techniques based on 5 phases of design thinking process: Empathize, Define, Ideate, Prototype and Tests by coding and transcribing sessions according to FBS and SAPPHIRE Models

PROFESSIONAL & CAMPUS INVOLVEMENT

CIM Club, IIT Ropar, *Mentor/Representative*

November 2020 - October 2022

- Led a community of over 100+ CAD/Simulation enthusiasts, fostering an innovative learning environment and enhancing collaborative skills, mirroring ethos of leading-edge manufacturing firms.
- Speaker for various hands-on sessions on 3D design software such SOLIDWORKS, ANSYS, AutoCAD.