

Soumil Iyer

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EDUCATION

Purdue University, West Lafayette, IN

Master of Science in Mechanical Engineering

January 2026 – December 2026 (Expected)

Bachelor of Science in Mechanical Engineering

August 2022 – December 2025

EXPERIENCE

3D Printing Lab Student Employee | Purdue University

August 2026 – Present

- Guiding students through FDM/FFF 3D-printing workflows, material selection, and slicing in Bambu Studio and Ultimaker Cura
- Setting up 3D printers, performing routine maintenance, and troubleshooting existing printers to support safe, reliable lab use

Graduate Teaching Assistant: Intro to Manufacturing | Purdue University

January 2026 – May 2026

- Instructing hands-on manufacturing and design labs to 19 students in lathing, milling, CNC, metal, wood, and electronics projects
- Teaching industry standards in component assembly, tolerancing, and GD&T per ANSI/ASME Y14.5 drawing standards
- Reviewed CAD drawings, BOMs, and assembly procedures against engineering specifications; maintained lab documentation

M.E. Undergraduate Research Intern | Purdue University

June 2025 – August 2025

- 3D-printed 60+ dogbone and 24 disk specimens in 6 thermoplastics in horizontal and vertical build orientations for Dr. Luz Sotelo
- Performed tensile testing (ASTM D638) and ultrasonic wave speed characterization to study orientation-dependent anisotropy
- Processed stress-strain curves and calculated Young's modulus and ultrasonic wave speed using MATLAB data analysis
- Produced formal technical documentation package demonstrating that build orientation significantly influences tensile modulus

M.E. Undergraduate Research Assistant: Energy Storage Analytics | Purdue University

August 2024 – December 2024

- Developed interactive Python program (customtkinter) to analyze 1000+ battery performance datapoints for Dr. Partha Mukherjee
- Acquired expertise in Li-ion cell design, battery performance optimization, and energy storage system fundamentals

Teaching Assistant: Thermodynamics I & ENGR 131 | Purdue University

August 2024 – December 2024

- Mentored 25–30 students in Thermodynamics I office hours, clarifying thermodynamic concepts and problem-solving approaches
- Instructed 50+ students in ENGR 131 on efficient use of Microsoft Excel and Python in technical assignments and team projects

PROJECTS

Mechanical Engineering Senior Design: Assisted Eating Utensil

August 2025 – December 2025

- Designed and prototyped a low-cost, stabilized utensil with a bearing-based damping mechanism to reduce hand tremor effects
- Conducted user-based design iterations, CAD modeling, prototyping, validation testing to deliver a functional sub-\$25 solution

Wind Tunnel Aerodynamic Analysis: Race Car Spoiler Lift and Drag Characterization

March 2025 – April 2025

- Designed in SolidWorks, 3D-printed, and wind-tunnel tested spoiler to measure lift/drag behavior across varying angles of attack
- Processed LVDT sensor data in MATLAB to compute aerodynamic forces and identify flow-separation stall point at 40 degrees

Heat Transfer Analysis: Blanket Insulation Materials Comparison

March 2025 – April 2025

- Performed transient cooling tests using thermocouples and epoxy skin analog to evaluate 3 insulation materials
- Modeled cooling behavior and calculated thermal conductivity values; validated results against published material data

Mechanical Engineering Sophomore Design: Foldable Travel Hanger

January 2024 – April 2024

- Collaborated with 4-person team to design lightweight, foldable, durable travel-friendly clothes hanger
- Modeled parts in Siemens NX, 3D-printed components, and successfully assembled working prototype

CERTIFICATIONS

- Purdue University: Finite Element Analysis (2025); Programming in Python (2023), Programming with Arduino (2023)

SKILLS

CAD & Design: Siemens NX (PLM/PDM), SolidWorks, Fusion, CATIA, AutoCAD, Finite Element Analysis (FEA), MasterCAM

Manufacturing: CNC, 3D-Printing (FDM/FFF), Milling, Lathing, Soldering, Woodworking, GD&T (ANSI/ASME Y14.5)

Testing & Measurement: Tensile Testing (ASTM D638), Ultrasonic Testing (NDE), LabVIEW

Programming & Software: FANUC ROBOGUIDE, MATLAB, Python, C, Arduino IDE, Simulink, Minitab, Microsoft Office

Manufacturing Systems: Lean Principles, Kaizen, 6S