

# Ishan Chhatbar, EIT

Mechanical Engineer | ishan.chhat23@gmail.com

Project Portfolio: [www.ishan-chhatbar.com](http://www.ishan-chhatbar.com) | LinkedIn: [www.linkedin.com/in/ishan-chhatbar](http://www.linkedin.com/in/ishan-chhatbar)

## SKILLS

**Certifications:** EIT (July 2025), Certified SolidWorks Associate (July 2025), Six Sigma Yellow Belt (August 2025)

**Software:** SolidWorks, CATIA V6, Onshape, MATLAB, Fusion 360 CAD/CAM, 3DEXperience PLM, Python, Fritzing

**Manufacturing & Prototyping:** 3D Printing, Laser Cutting, CNC Machining, Mechatronics, GD&T (ASME Y14.5)

**Analysis:** FEA, ANSYS, Tolerance Analysis, DFA, DFMEA, DFM, Root Cause Analysis (RCA), Hardware Debugging

**Workflow:** Agile (Confluence & Jira), MS Office (VBA and Excel), BOM Management, PowerBI, Supplier Coordination

## EDUCATION

**The University of Texas at Austin**

**Austin, TX**

*Bachelor of Science in Mechanical Engineering, Design and Manufacturing Track*

**August 2020 - May 2024**

## EXPERIENCE

**Texas Inventionworks**

**Austin, TX**

*Projects Lead*

**January 2022 - May 2024**

- Mentored students across 250+ projects on additive and subtractive manufacturing, as well as electrical design techniques, enhancing their CAD, GD&T (ASME Y14.5), and rapid iterative prototyping skills.
- Conducted hands-on mechanical troubleshooting to diagnose and repair mechanical, thermal, and control system failures on 3D printers and laser cutters, improving machine uptime and enhancing prototype quality.
- Led a cross-functional team of 15 engineers to execute in-house builds by leading design reviews and implementing a project version control system, ensuring proper documentation.

**Tesla Inc.**

**Palo Alto, CA**

*Technical Program Management Intern*

**August 2023 - December 2023**

- Led the development of an end-to-end heat-staking process in battery builds, collaborating with design, vendor, manufacturing, and technician teams to ensure mechanical integration and resolve real-time assembly issues.
- Designed a laser-cut safety guard in CATIA V6 as part of the heat-staking implementation and authored detailed build instructions to support NPI technicians in mechanical integration and production readiness.
- Utilized 3DEXperience PLM to initiate international supplier outreach, securing mechanical parts and electrical equipment worth \$200,000 from 20+ international suppliers to support test platform readiness and create BOMs.
- Coordinated battery module test execution by leveraging Jira to monitor teardown progress, track run status, and validated testing plans through weekly meetings with abuse test owners; collaborated with technicians to secure hardware, refine BOMs, and maintain up-to-date technical documentation in Confluence.

**Procter & Gamble**

**Cape Girardeau, MO**

*Manufacturing and Mechanical Process Intern*

**June 2023 - August 2023**

- Designed a modular 3D-printed operator toolkit using SolidWorks, applying DFM/DFA principles and tolerance analysis for slot integration and ease of assembly, aligned with 5S standards to reduce injury-related downtime.
- Spearheaded a lean manufacturing initiative by standardizing the preparation and delivery of paper towel rolls to the converting line, resulting in a 33% reduction in cycle time and a 50% reduction in material waste.
- Conducted Root Cause Analysis (RCA) on conveyor-fed wrapping system inefficiencies using PowerBI; updated control systems by adjusting HMI targets across 15 SKUs, leading to a projected \$60K in loss prevention.
- Directed a touch reduction initiative by developing a VBA program, successfully identifying and minimizing unnecessary operator interactions, achieving a 10% reduction in total touches per year.

**Longhorn Racing Combustion | Formula SAE**

**Austin, TX**

*Powertrain Design Engineer*

**October 2021 - May 2022**

- Conducted CFD analysis in ANSYS to refine intake plenum geometry, system airflow pressure losses by 7%.
- Modeled and prototyped iterations of the stub shaft spacer in SolidWorks using additive manufacturing methods from thermoplastics such as PLA, PETG, and ABS for improved component alignment.

## PROJECTS

**Robot Hand Controller | Electrical Lead**

**Spring 2024**

- Developed the electrical system across two design sprints; specified and integrated servo motors, microcontrollers, potentiometers, and motor drivers; captured user inputs to enable custom feedback loops.
- Soldered sensors to prototype boards and utilized JST connectors for cable management to ensure reliable electrical connections and a compact form factor for integration into the mechanical assembly.

**Last Mile Delivery Drone | Mechanical Team Lead**

**Spring 2023**

- Led concept-to-prototype mechanical design of a UAV frame, camera enclosure, and payload delivery subsystems. Created brainstorming sketches, 3D models in SolidWorks, drawings with GD&T (ASME Y14.5), performed trade studies for material selection, and applied DFM and DFA principles to reduce prototype lead time by 50%.
- Validated frame structural integrity using hand calculations and FEA; optimized 3D print workflows (part orientation and support strategies) to reduce support material by 30% and improve surface quality.
- Led the electromechanical integration of the flight controller PCB and optimized wiring into the UAV chassis; executed DFMEA and conducted 24+ flight trials to validate flight time, speed, and drop accuracy; applied  $R^2$  regression analysis to implement field-based design modifications to improve contactless delivery performance.

**Machined Vise**

**Spring 2024**

- Machined a vise from brass and aluminum using manual mills, lathes, and CNCs programmed with Fusion CAM toolpaths. Applied basic tolerance analysis and GD&T (ASME Y14.5) to ensure dimensional accuracy.