Ishan Chhatbar

Mechanical Engineer | ishan.chhat23@gmail.com | US Citizen

Project Portfolio: www.ishan-chhatbar.com | LinkedIn: www.linkedin.com/in/ishan-chhatbar

SKILLS

Software & Tools: SolidWorks | Fusion 360 CAD/CAM | MATLAB | ANSYS | Python | GD&T (ASME Y14.5) | 3DExperience PLM (CATIA V6) | Microsoft Office Suite (VBA) | Confluence | Jira | FEA | Mechanical & Analysis: 3D Printing (FDM, SLA, SLS) | Laser Cutting | CNC Machining | Lathe | Mill | Soldering | Mechanical Debugging | Root Cause Analysis | Rapid Prototyping | DFA | DFMEA | DFM | Tolerance Stack-Up **EDUCATION**

The University of Texas at Austin

Bachelor of Science in Mechanical Engineering | Design and Manufacturing Track **EXPERIENCE**

Tesla Inc.

Technical Program Management Intern

- Led the development of an end-to-end heat-staking process involving GRFP (Glass Reinforced Fiber Plastic) in battery builds, working cross-functionally with design, vendors, and manufacturing teams. Designed a laser-cut safety guard using 3DExperience and authored detailed build instructions for handoff to NPI technicians.
- Utilized 3DExperience PLM to initiate international supplier outreach, securing mechanical parts and electrical equipment worth \$200,000 from 20+ vendors to support battery builds, create BOMs, and maintain inventory.
- Leveraged Agile tools such as Jira to monitor battery module teardown progress, track test run status, collaborate with technicians to ensure timely test build shipments, and update documentation in Confluence.
- Organized weekly meetings with abuse test owners to validate testing plans, refine BOMs, and secure missing test hardware for battery builds to effectively maintain alignment with the test timeline in Jira.

Procter & Gamble

Manufacturing and Mechanical Process Intern

- Designed a modular 3D-printed operator toolkit in SolidWorks, applying DFM principles and tolerance stack-up analysis to enable slot integration, in alignment with 5S safety standards, and reducing 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 50% material waste elimination.
- Performed Root Cause Analysis (RCA) on Bounty plastic wrapping inefficiencies; adjusted HMI targets across 15 SKUs and projected \$60K in loss prevention while aligning with lean manufacturing standards.
- Directed a touch reduction initiative by developing a VBA program, successfully identifying and minimizing unnecessary operator interactions, resulting in a 10% reduction in total touches per year.

Texas Inventionworks

Projects Lead

Austin, TX Spring 2022 - Spring 2024

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

Longhorn Racing Combustion | Formula SAE

Powertrain Design Engineer

- Optimized the intake manifold's plenum design using CFD simulations in ANSYS to reduce air pressure 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 alignment.

PROJECTS

Robot Hand Controller | Electrical Lead

- Developed the electrical system for a robotic hand teleoperation controller, specified and integrated servo motors, microcontrollers, potentiometers, and motor drivers; recorded trigger movements for custom feedback loops.
- Soldered headers and sensors to prototype boards for the robot-hand controller to ensure reliable joints and compact form factor for integration into the mechanical assembly.

Last Mile Delivery Drone | Mechanical Team Lead

- Owned first-principles design of a laser-cut UAV frame, 3D-printed camera enclosure, and payload delivery subsystems. Created 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 structural loads using hand calculations and FEA stress analysis; optimized 3D print workflows (part orientation and support strategies) to reduce support material by 30% and improve surface quality.
- Integrated flight controller PCB and wiring into mechanical assembly; executed DFMEA and ran 24+ flight trials to validate flight time, speed, and drop accuracy; used R² analysis to optimize weight distribution, thrust, and landing to improve contactless delivery reliability.

Machined Vice

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

Spring 2023

Spring 2024

Spring 2024

Palo Alto, CA Fall 2023

Fall 2020 - Spring 2024

Austin, TX Fall 2021 - Spring 2022

Austin, TX

Cape Girardeau, MO **Summer 2023**