MAX SONG

https://max-song-04.github.io/ | +1 (832) 660-2931 | US Citizen | maxsong@utexas.edu | linkedin.com/in/maxsongut

EDUCATION

The University of Texas at Austin May 2027
Mechanical Engineering | *Design and Manufacturing Track* GPA: 3.85

SKILLS

Manufacturing: CNC and Manual Mill machining, Manual Lathe, Laser Cutters, SLA and FDM Printers, Soldering, Composite Layups
Software: CAD (Solidworks, Fusion 360, Blender), CAM (Fusion 360), Python, Abaqus, MATLAB, Arena, MS Office, FEA, CAE

RELEVANT COURSES

Statics, Thermodynamics, Solids, Dynamics, Engineering Computational Methods (MATLAB)

EXPERIENCE

Texas Inventionworks Makerspace at the University of Texas at Austin – *Woodshop Lead;* Austin, TX August 2024 – Present
- Instructed over 50 students in a hands-on curriculum covering manual mill, lathe, and SLA/FDM 3D printing operations
- Developed bolt action pen step-by-step guide with manual mill and lathe to increase student participation with machine shop
- Assisted and consulted student research and personal projects such as 3lb combat robot, RC vehicles, and a custom ski propeller

Texas Rocket Engineering Lab; Austin, TX September 2024 – Present
Halcyon Mark 1 – Composites Manufacturing Engineer
- Modeled 4ft nose cone mold in SolidWorks for carbon fiber composite layups utilizing Design for Manufacturing (DFM) principles
- Engineered and fabricated access ports and fiberglass raceway mounts on rocket skirts to integrate LOx and propellant fluid lines
- Performed composite carbon fiber layups of rocket couplers, raceway mounts, and skirt that passed a 9600 lbf structural test

Orbital Test Stands – Structures Engineer
- Spearheaded 3D modeling of 30+ ft chamber for test chamber infrastructure for integration and preliminary design review (PDR)
- Developed bolt load calculator using relevant material properties to achieve over 150% increase load support with 2x safety factor
- Designed pressure transducer brackets that mitigated vibrations during engine testing and ensured accurate fluids monitoring

Project PL-8 – *Shell Engineer*; Austin, TX September 2024 – December 2024
- Modeled vehicle shell panels in Blender optimizing for Design for Assembly (DFA) and basalt fiber composite manufacturing
- Incorporated Design for Manufacturing (DFM) principles to facilitate vacuum forming of composite molds for layup preparation
- Coordinated structural integration between shell and chassis teams and systems integration with powertrain and electronics team

Architected Intelligent Matter Lab at the University of Houston – *Research Intern;* Houston, TX June 2025 – Present
- Designed novel fabrication method for thin-shell elastomer half-spheres achieving sub-millimeter accuracy for acoustical testing
- Improved Abaqus FEA accuracy by over 10% using Instron D412 tensile tests and OpenCV video extensometer to define elasticity
- Automated workflow from material characterization to deformation mapping with comprehensive python framework

Department of Homeland Security – *Intern;* Phoenix, Arizona June 2024
- Placed first in program-wide competition with an airport data integration API resulting in an over 20% increase in made flights
- Implemented researched solutions to Phoenix Sky Harbor Airport's customs sim increasing operational efficiency by over 10%
- Completed curriculum covering software like Arena, Python and topics like ML, AI, operational efficiency from industry experts

Song Leather – *Founder;* Houston, TX December 2020 – Present
- Launched and scaled e-commerce platform on Etsy designing custom tools to streamline production in Fusion 360 and Illustrator
- Achieved ~3 million views, ~500k likes, ~10k followers across social media platforms and over 20 sales during first fiscal year

University of Texas Club Volleyball – *Outside Hitter & Setter*; Austin, TX August 2023 – Present
- Implemented comprehensive attendance report substantially improving team attendance increasing overall player accountability
- Strategically devised team plays as a setter enhancing team chemistry leading to a top 10 ranking in the country

ADDITIONAL INFORMATION

Languages: Working Proficient in Chinese
Work Eligibility: Eligible to work in the U.S. with no restrictions