

MATTHEW LEE

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EDUCATION

The University of Texas at Austin BS, Mechanical Engineering **May 2028**
GPA: 3.88/4.00

Relevant Coursework: Mechanics of Materials, Thermodynamics, Engineering Dynamics, Statics, Linear Algebra and Differential Equations, Engineering Physics II, Calculus II and III, MATLAB

TECHNICAL SKILLS

CAD: SolidWorks, ANSYS Mechanical, HSMWorks, Fusion360, FusionCAM

Manufacturing: HAAS CNC Milling, 3D prototyping, CAM Programming, Creation of Engineering Drawings

Software: MATLAB, Microsoft Suite (Excel, PowerPoint, Word)

ENGINEERING EXPERIENCE

Formula SAE Drivetrain Lead | Longhorn Racing **August 2024 - Present**

- Lead a subsystem team designing, manufacturing, and integrating full drivetrain assembly. Differential, mounts, axles, chain system, and shifting mechanism for a FSAE car.
- Reduced total drivetrain assembly weight by 20% and rotating mass by 25% year-over-year through systematic design optimization and material selection.
- Designed differential mounts and tripod assemblies from concept to production in SolidWorks; validated structural integrity via ANSYS Mechanical FEA, achieving target safety factors while minimizing mass.
- Directed rapid physical prototyping using FDM 3D printing and bench-tested shifting assemblies under realistic load conditions; analyzed test data to refine tolerances and mounting strategies.
- Presented design rationale and FEA results at Preliminary and Critical Design Reviews before industry engineers; technical recommendations directly adopted for final vehicle integration.
- Generated CAM toolpaths in HSMWorks and supervised HAAS CNC machining operations to hold tight tolerances on all drivetrain components.

Team Member | Texas Engineers for World Health Bio-Design **August 2024 - January 2025**

- Collaborated on a cross-functional team developing an AI-assisted stethoscope for deployment in low-resource Sub-Saharan African clinics, targeting improved diagnostic accuracy with strict cost and reliability constraints.
- Iterated on device prototypes through weekly design-test-refine cycles; incorporated user feedback to improve acoustic performance and ergonomics, delivering a functional proof-of-concept on schedule.

PROJECTS

Differential Mount Design and FEA Optimization **Fall 2024 - Spring 2025**

- Conducted FEA on differential mounts using SolidWorks and ANSYS to evaluate stress distribution under torque, braking, and lateral loads, informing design changes that reduced weight while maintaining safety margins.
- Delivered technical reports at critical design review with stress plots, safety factors, and optimization recommendations, adopted by drivetrain for final vehicle integration.

LEADERSHIP & ADDITIONAL EXPERIENCE

Theta Tau Professional Engineering Fraternity- Class President **Fall 2024**

- Organized and lead PNM class, worked closely with organization to organize events and volunteering

Waverly Golf Club - Lifeguard **Summer 2022 - 2023**

- Ensured health and safety of members by maintaining physical and mental preparedness and by performing chemical checks while working with a small team of lifeguards

ADDITIONAL INFORMATION & SKILLS

Interests: Motorsports, Aviation, Autonomous Systems, Backpacking, Running

Work Eligibility: Eligible to work in the U.S. with no restrictions