Lucas Goellner

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Education

University of Michigan Ann Arbor, MI
B.S.E. Mechanical Engineering Exp. May 2028
Coursework: Design and Manufacturing, Thermodynamics, Solid Mechanics, Differential Equations

Project Experience

Michigan Mars Rover Team: *MRover* Ann Arbor, MI
Chassis Engineer Sep 2025 – Present

- Designed the differential bar and chassis body components using **Siemens NX**, reducing lost motion with tighter tolerances and joint redesign.
- Manufactured parts using an in-house mill, lathe, laser cutter, and 3D printer cutting manufacturing cost to stock and external labor.
- Worked with carbon fiber and metal joining's for differential part manufacturing as well as joint rotation parts.
- Coordinated with mechanical, electrical, and software teams to ensure compatibility with chassis.

Formula SAE Electric: *Dearborn Electric Racing* Dearborn, MI
Brake System Team Leader Oct 2024 -Jul 2025

- **Led** brake system design and integration or an electric Formula SAE vehicle, owned pedal box, braking architecture, and sensor integration.
- **Designed** Pedal Box and Brake System parts in **SolidWorks**, integrating 32 parts into a fully function assembly.
- Optimized pedal and mounting tabs geometry using **SolidWorks Simulation**, achieving a **2.9 factor of safety** under peak braking loads.
- Delivered Preliminary Design Review and Critical Design Review to team leadership, transferring knowledge of brake system to broader team.
- In-house manufactured pedals and tabs using college facilities, gaining hands on understanding of fabrication constraints.
- Sourced brake and pedal system, refurbished rotors, keeping total system cost within a **$2,000** budget.
- 3D Printed intricate sensor attachments and pedal extensions to accommodate different driver heights and limited manufacturing timelines.
- Integrated with electrical and software teams to implement brake and pedal sensors.
- Brake system performed **without failure** during competition, ensuring driver safety.

Work Experience

United States Army Colorado Springs, CO
Soldier/ Bradley Crewmen Jul 2021- Mar 2024

- Operated and maintained the M2A3 Bradley Infantry Fighting Vehicle.
- Controlled and managed the Bradley turret and onboard communications systems.
- Ensured reliable communication during high stress training events to support commanding officers.
- Collaborated with NATO armies overseas, reinforcing teamwork and working past language barriers.
- Managed logistics and maintenance coordination for 24 barracks rooms.

Skills

CAD and Simulation: Siemens NX, SolidWorks, SolidWorks Simulation, AutoCAD
Software and Tools: C++, Excel
Manufacturing: Milling, Lathe, 3D Printing, Laser Cutting