Mackemey Munion

Mcm329@cornell.edu
Cell: (215) 347-4201
Mackemey Munion | LinkedIn | Munion Portfolio

DESCRIPTION

As a mechanical engineering student with a strong foundation in mechanical design, design for manufacturing, and additive manufacturing, I am deeply passionate about automotive and aerospace engineering. I constantly seek out opportunities to challenge myself and expand my knowledge beyond the academic setting.

EDUCATION

Cornell University, College of Engineering, Ithaca, NY **Expected May 2026**
Bachelors of Science in Mechanical and Aerospace Engineering **| GPA: 3.872; Dean's List**

Relevant Courses (*Currently Enrolled): System Dynamics*; Mechanics of Engineering Materials*; Introductory Fluid Dynamics*; Dynamics**;** Statics; Thermodynamics; Mechanical Synthesis; Physics Ⅰ Ⅱ Ⅲ ; Data Science

PROJECT EXPERIENCE

Cornell Electric Vehicles - Student Project Team, Cornell University, *Drivetrain Lead* **Oct 2022-Present**

- Work in a team of over 50 driven students to design, manufacture, and test the most efficient, battery-electric vehicle possible to compete in the Shell Eco-Marathon while we continue to integrate autonomous systems into the vehicle.
- As 2024-2025 Drivetrain Lead, I am responsible for overseeing the design and development of the transmission and rear assembly.
- Performing motor and gearbox sizing, as well as efficiency calculations, to upgrade from a chain and sprocket drive to a dual motor power transmission, improving efficiency from ~26.3% to ~86%.
- Designing and calculating tolerances limits for the driveshaft in the dual motor system to ensure effective power transmission from the gearbox to the wheel hub.

General Motors, Parma Metal Center, Mechanical Engineering Intern **June 2024-August 2024**

- Designed and 3D printed sensor and flow control valve mounting brackets as part of a cross functional initiative to improve production in the press room and metal assembly.
- Developed and modeled in AutoCAD a pneumatic adaptor tool to actuate an end of life brake clutch piston and release the brake linings for future use with additive safety measures.
- Created a heat set insert alignment tool to improve functionality and reliability of fasteners embedded in 3D printed components.

International Youth Physicist Tournament, *Project Lead and Vice President* **May 2021-May 2022**

- Facilitate weekly research and experimental design meetings, orchestrating discussions
- Develop and implement experiments to delineate project structural limits and constraints
- Utilize data analysis tools such as Tracker and LoggerPro to collect and analyze geometries, culminating in concise conclusions presented through professional visual aids using Spyder and Microsoft Excel

CAMPUS INVOLVEMENT

Cornell Project Teams, Cornell University, *Student Assistant* **Aug 2024-Present**
Engineering Peer Advising, Cornell University, *Peer Advisor* **Aug 2023-Present**
Society for Women Engineers, Cornell University, *Member* **Oct 2022-Present**
Association of Mechanical Engineers Cornell University, *Member* **Aug 2022-Present**
Cornell Maker Club, Cornell University, *Member* **Aug 2023-Present**

SPECIALIZED SKILLS

Programs: Autodesk Inventor, Fusion 360, Autodesk AutoCAD, ANSYS Workbench, MATLAB
Manufacturing: Manual Mill and Lathe, 3D Printing, Laser Cutting, Engineering Drawings