Charles Linder

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Education

Duke University | Durham, NC — Graduation: May 2026

B.S.E in Mechanical Engineering | *Minor in Economics* — **GPA:** *3.82/4.00*

- **Relevant Coursework:** Control Systems, Thermodynamics, Fluid Mechanics, Materials Science, Dynamics, Statics, Design I-III | *Fall 2024:* Heat & Mass Transfer, Design IV

Experience

Duke University Motorsports (Formula SAE) — **August 2022 - Present**

Mechanical Engineer and Project Team Lead — *Durham, NC*

- Designed electric shifter and clutch mechanisms informed by FEA to reduce weight by 32% and shifting time by 58%; collaborated with drivers to improve accessibility and ease of use
- Optimized exhaust manifold with engine and fluid simulations, increased power by 18%
- Applied machining skills to design for manufacturability and independently manufacture systems
- Oversaw and mentored team of five other students within powertrain subsystem
- Facilitated cross-functional collaboration to integrate powertrain components into larger assembly

Merz Aesthetics – Ultherapy — **May 2025 – Aug 2025**

Mechanical Engineering Intern — *Raleigh, NC*

- Developed reliability testing fixture for ultrasound therapy devices, iterated with 3D printed prototypes, and independently manufactured final assembly
- Designed manufacturing alignment fixture, reduced assembly time by 35% and tolerance by 50%
- Authored comprehensive documentation and SolidWorks CAD packages, allowing future teams to replicate and produce fixtures for at-scale implementation

WSP USA — **May 2024 – Aug 2024**

Mechanical Engineering Intern — *New York, NY*

- Utilized thermal load simulations to build HVAC equipment selection strategies, cutting costs by 23%
- Automated equipment sizing procedures by incorporating thermodynamic calculations into an excel spreadsheet, increasing productivity for team members
- Conducted site visits to survey existing equipment, adapted solutions as the client's needs changed

Duke University Mechanical Engineering — **Dec 2024 - Present**

Teaching Assistant – Mechatronics and Control Systems (EGR224) — *Durham, NC*

- Increased student understanding by tailoring guidance to each student's needs and ensuring thorough understanding of mechatronics concepts during office hours
- Orchestrated lab sessions, guiding students through projects utilizing MATLAB, LabVIEW, and control systems theory

Projects

Wind Turbine for Industrial Exhaust — **August 2023 – May 2024**

- Developed a small-scale wind turbine for industrial exhaust outlets capable of powering lighting fixtures or security systems within the building
- Collaborated and closely communicated with a team of engineering, economics, and policy students to transform the prototype into an economically and environmentally viable product

Skills

Software: SolidWorks CAD+FEA | CATIA | ANSYS Discovery | Python | MATLAB | LabVIEW

Fabrication: Rapid Prototyping | GD&T | 3D Printing | CNC Machining | Turning | Milling | Laser cutting