

Matthew Whispell

Potsdam, NY • matthewwhispell@gmail.com • (315)-262-5011 • [linkedin.com/in/matthewwhispell](https://www.linkedin.com/in/matthewwhispell) • mattwhispell.com

Electrical Engineer focused on EV design, with experience in high and low voltage circuitry and design for electrification. Additionally, I specialize in control theory and embedded systems.

Professional Experience

Clarkson Formula Electric SAE Racing Team • Electrical Engineering Lead *2025-Present*

- Created modular dash software for ESP32-S3 that interfaces with CANbus to provide the driver a data rich interface that allows for live configuration parameters to be tuned.
- Utilized Electrical Safety Officer training to ensure that procedures for handling high voltage systems are followed.
- Developed a battery pack that provides 30% increase in voltage over the last design to provide higher motor speed output, leading to a 20% reduction in lap times.

Clarkson University Undergraduate Research • Embedded Systems *July '26-Present*

- Hardware optimizations of a custom potentiostat for environmental contaminant detection, increasing detection accuracy to 1ppm.
- First author on an IEEE UEMCON 2026 published journal article detailing the research done.

Hazen Enterprises • Maxfields and Cactus Grill & Cantina Restaurants *2021-Present*

- Worked on a team of expeditors to keep kitchen output consistent.

Potsdam FTC Robotics Club • Team Lead / Lead Engineer *2020-2024*

- Trained machine-learning models for use in autonomous navigation and object manipulation, leading to 20% higher average match scores.

Education

Clarkson University • Bachelor of Electrical Engineering • 3.98 Cumulative GPA *2024-2028*

- Awards: Presidential Scholar '24-'26, Undergraduate Commercialization Award 2025

Projects

High Voltage Battery Pack Design

- Developed fusible links that safely disconnect cells in the event of an internal cell short.
- Ensured that the battery pack can endure the electrical and mechanical stresses of a racecar.
- Utilized the drivetrain to its maximum potential by optimizing voltage and current output.

Custom EEPROM Programmer

- Utilized an ATmega32U4 microcontroller with baremetal C++ programming to efficiently program EEPROM memory chips 20% faster than off the shelf programmers.

Custom 3D Printer Design & Manufacture

- Utilized Autodesk Fusion for the mechanical design of a custom 3D printer
- Integrated Klipper firmware to allow for resonance and pressure advance compensation

Skills

High Voltage Safety, Altium Designer, KiCAD, Embedded Systems, C++, C#, Python, CANbus Protocol, MATLAB, TensorFlow Pipelines, Machine Learning Training, PID controllers, 3D Printing, Autodesk Fusion, Systems Integration, Team Leadership