

David Bulos

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EDUCATION

Electrical & Computer Engineering Undergraduate

London, ON, Canada

University of Western Ontario

2023 – 2027

- Maintaining a strong average of 86.8% and received Dean's Honor List recognition in both my first and second year.
- Excelled in core courses including Circuits and Systems (98%), Applied Math II (99%), Digital Logic (95%), and Electric Circuits (93%).

TECHNICAL SKILLS

Programming: C++, Python, Java, MATLAB/Simulink

Software: Git, Linux, STM32CubeIDE, PlatformIO, VS Code, Excel

Electrical Design: Altium, SPICE/Micro-Cap, Microcontroller Integration, Serial Communication (CAN, isoSPI, I2C, RS232)

EXPERIENCE

Western Formula Racing | Student EV Racing Team

London, ON

GLV Lead (May 2024 – Present), Electrical Team Member (Nov 2023 – Apr 2024)

- Led the development of the GLV subsystem, overseeing and implementing all low-voltage electronics and wiring, including a redesign of the Accumulator Motherboard (hardware & firmware), and the creation of other crucial custom PCBs
- Managed and mentored a team of GLV members by assigning design tasks, reviewing schematics, and teaching fundamental concepts in Electrical Engineering.
- Debugged using CAN analysis, multimeter probing, and harness/PCB inspection during testing phases.
- Collaborated with subsystem leads across the team to align GLV hardware/firmware with vehicle safety, performance, and rules requirements.
- As a member I joined mid-season and quickly developed skills that led to a leadership role within six months.

Undergraduate Research | Semantic Communication & Distributed Systems

London, ON

University of Western Ontario — Awarded to the Top 4 ECE Summer Research Applicants

May 2024 – Aug 2024

- Designed a semantic communication framework for distributed computing systems, enabling context-aware tasks.
- Modeled dynamic resource-sharing with RDF triples and knowledge graphs to prioritize task offloading based on energy and data relevance.
- Collaborated with faculty and graduate researchers to refine architecture and deployment strategies for decentralized systems.

PROJECTS

WFR – SoC/SoH Estimation for HV & GLV Batteries

- Designed and implemented State of Charge and State of Health estimation algorithms for both the high-voltage (HV) and low-voltage (GLV) battery packs.
- Applied Li+ and LiPo battery theory to develop a coulomb counting method using a Hall-effect current sensor integrated into the accumulator motherboard.
- Established calibration points using full charge and controlled discharge tests to improve long-term accuracy of capacity tracking and state estimation.
- Wrote embedded software to read sensor data, maintain charge counters, and perform runtime recalibration of the hall-effect during vehicle operation.

WFR – Launch Control System

- Co-developed an embedded launch control algorithm with two teammates to optimize tire slip and maximize acceleration during competition launches.
- Independently implemented the driver interface, including physical controls for safe and intuitive engagement/disengagement of launch control.
- Wrote embedded software to activate the algorithm during race startup, integrating it with the vehicle's control and safety systems.
- Achieved a 16.85% improvement in average acceleration time compared to manual launches by the driver, as validated through timed testing.

Surveillance RC Car (Personal Project)

- Designed and built a remote-controlled car with wireless video and sensor feedback for use in inaccessible or hazardous environments.
- First exposure to microcontrollers and embedded systems, laying the foundation for further hands-on electronics development.