

# Kevin Wang

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## EDUCATION

**BESc, Mechatronic Systems Engineering** | Western University

June 2021

3.7 GPA | Dean's Honor List | 2016 – 2021

## EXPERIENCE

**Design Engineering Technologist** | FPH Group

May 2021 – Current

- Working towards designing and manufacturing the battery and control systems for an 80V electric mining vehicle (EMV); developed the battery architecture to increase discharge capacity by 40%
- Analyzed CAN messages on the EMV's inverter and battery management system to improve the vehicle dynamics during turns, acceleration and deceleration resulting in less jerk
- Designed and manufactured the wiring harness for the EMV to IP67 standards; SolidWorks Electrical was used to expedite the design process by 25%
- Reverse engineered a DC converter-isolator system to create a functionality testing plan for the production team; also led testing training to the production team to streamline manufacturing
- Managed the EMV project's activities, including scheduling, design, manufacturing milestones, and coordination with the mechanical subsystem

**Engineering Intern** | Ameresco Canada Inc.

May 2019 – August 2020

- Assisted the Thames Valley District School Board to redesign the Building Automation System (BAS) control systems by developing the sequence of operations and points lists to promote energy savings by 17%
- Completed an electrical heat pump replacement at John Paul II Catholic Secondary School by analyzing the electrical load, voltage, ampere, and phase of each unit, per the Ontario Electrical Safety Code
- Collaborated with clients and contractors to commission BAS sites to ensure completion of any controls and mechanical upgrades based on the project specification
- Hosted weekly update call and prepared meeting minutes with clients and contractors to meet project completion deadlines and to ensure project scopes are met

## EXTRACURRICULAR ACTIVITIES

**Accumulator Subsystem Lead** | Western Formula Racing (FSAE Electric)

May 2019 – May 2021

- Managed the day-to-day schedule for the accumulator subsystem, which includes coordinating resources with other subsystem leads, reviewing system designs, ensuring deliverables and key milestones are met, and leading knowledge transfer to junior members
- Designed a state-of-charge algorithm using Python's matplotlib and Arduino to calculate the open-circuit voltage and count the available Coulombs, the results were then tuned using a Kalman Filter
- Utilized EAGLE to implement a low-pass active filter to the Brake System Plausibility Device (BSPD) to filter out unwanted noise and EMI which prevented the BSPD faulting incorrectly; output signal was verified via LTspice to confirm PCB design
- Led accumulator testing by extracting data from MoTeC ECU and Orion BMS, and generating and interpreting CAN messages to debug critical errors and to increase vehicle top speed by 20%
- Generated a Failure Mode & Effects Analysis (FMEA) of the electrical subsystem to identify possible sources of failures and the steps taken to minimize them, which helped simplify debugging the electrical system to reduce failure start-up by 50%

## TECHNICAL SKILLS & ADDITIONAL INFORMATION

**Language:** C/C++, Python, MATLAB

**Programs:** Microsoft Excel & Powerpoint, Visio, SolidWorks (CSWA), EAGLE, LTspice, HTML & CSS

**Communication Protocols:** RS232, RS485, CAN

**Instrumentation:** Multimeter, Oscilloscope, Function generator

**Other Activities:** Music (saxophone), Ivey Fintech Club Researcher, Western Investment Club Researcher