# Tyler Wong

**Electrical Engineering Student**

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## SKILLS

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|---|---|---|---|
| ***Elec Design*** | Altium, LTSpice, AC/DC circuit analysis, µControllers, Arduino, FPGA | ***Mech Design*** | Solidworks, 3D Printing, Waterjet cutting, DFA/DFM, Shop Tools |
| ***Work Software*** | Git, Slack, Google Suite, diagrams.net | ***Languages*** | C/C++, Verilog/VHDL, Python |

## EDUCATION

**University of British Columbia** **Anticipated April 2021**
*Bachelors of Applied Science*, Electrical Engineering

## TECHNICAL PROJECTS

**Autonomous Electrical Characterization Platform** (see https://projects.tylerqwong.me/ada/probe-station) **Ongoing**

- Drove collaborative discussion of project requirements to ensure effective support of ongoing research objectives.
- Designed mechanical test fixture to interface with slide-handling module being developed in parallel by colleague.
- Developed and debugged software package for coordination of test instruments to perform scientific measurements.

**BLDC Motor Driving PCB** (see https://projects.tylerqwong.me/design-studio-2/pcb-redesign) **April – June 2020**

- Led pivot from project course to personal project after course cancellation due to COVID-19.
- Re-vamped existing circuit diagram for unexpected constraints and set up new cloud-based format.
- Collaborated with others to produce PCB in Altium up to wire routing stage.

**RoboMaster Documentation Project** (see https://projects.tylerqwong.me/robomaster-pdb/doc) **February – March 2020**

- Audited out of date documentation set for squad of engineering design competition robots.
- Independently researched a solution, specified a workflow, presented findings to team, and received resources for project.
- Managed project in-person and remotely up to submission deadline to successfully obtain travel assistance funding.

**Custom Motor Prototype** (see https://app.gitbook.com/@tylerqwong/s/projects/design-studio-2/demo) **January – May 2020**

- Fulfilled admin duties including parts acquisition, team communications, external communications with manufacturers, etc.
- Led mechanical sub-team in BLDC motor research, design, design verification (simulation), manufacture, and assembly.
- Incorporated real data, simulated data, and design-for-assembly/design-for-manufacture principals into design.
- Utilized tools including SolidWorks, Altium, FEMM, SimulationX, waterjet cutter, FDM 3D printers, and machine shop.
- Communicated motor design to electrical sub-team to develop controls algorithm and motor-driving electronics.
- Coordinated with PCB manufacturer to produce motor-driving circuit board.

**Coin Picker Robot** **April 2019**

- Designed and implemented motor and servo driver circuits, inductive metal detectors, and logic noise isolation.
- Documented entire stack of hardware design through hand drawn circuit diagrams and BOM.
- Introduced team of six to Git version control practices and wrote embedded C/C++ PWM control for servo motors.

**Simple RISC Machine in Verilog** **October 2018**

- Wrote and tested 16-bit processor with branch instructions, function calling, memory stack, and direct memory access, features according to given specifications.
- Created test suites and documentation in order to demonstrate processor functionality.

## ADDITIONAL EXPERIENCE

**Electrical and Computer Engineering Student Society,** UBC **September 2019 – Current**
*VP External Affairs*

- Organized trip to Silicon Valley for 30 students to visit tech companies and network with alumni.
- Managed team of volunteers to facilitate trip activities with personal ownership of transportation and catering.