

Michael Lin

Candidate for BASc Mechatronics Engineering | University of Waterloo

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Summary of Skills

C	Analog circuit design	RTOS
C++	Signal conditioning	I ² C, UART, SPI
Git	Soldering	ARM
MATLAB	Oscilloscopes	Arduino

Projects

Obstacle Course Robot

Sensors and instrumentation course

- Built a robot with light and magnetic sensors to navigate through an obstacle course
- Calculated resistor and capacitor values for filters and signal processing circuits
- Soldered through pin capacitors, transistors, resonators, voltage regulators and resistors

6 – Axis Gesture Controlled Robotic Arm

Hack the North 2019

- Used RF transmitters to communicate gesture control movements over I²C across Arduino boards
- Programmed an algorithm to calibrate accelerometer and motor movement

Experience

Automation Systems Engineering — ATS Automation

May 2019 – Aug 2019

Advanced medical device automation manufacturing solutions

- Designed prototyped and validated a new aseptic manufacturing process for a pharmaceutical product to triple production volume, improve overall operating efficiency and maintain quality
- Demonstrated strong problem-solving skills when debugging automation lines to reduce reject rate by 16.3%
- Worked with applications engineering team to conceptualize station designs which led to ATS landing a new client
- Gained exposure to pneumatics, servos, 6-axis robots, laser profilers, ultrasonic welders and UV adhesive curing

Solidworks Automation Co-op — Daltec Fans

Sep 2018 – Dec 2018

Large industrial centrifugal fans

- Modeled centrifugal fans and produced manufacturing drawings for steel sheet metal fabrications in SolidWorks
- Created a design automation program using DriveWorks which saves 5 hours of engineering development time
- Consulted with mechanical engineers to establish standards for stiffener placement to reduce vibrations, weld clearances and bending radiiuses

Junior Web Developer — University of Waterloo

Jan 2018 – Apr 2018

Intuitive course evaluation interfaces

- Recreated a course evaluation feedback tool from scratch to read in and display aggregated metrics
- Designed a user-friendly front-end interface by adding responsive styling using BootStrap4, HTML and CSS
- Developed a scalable backend infrastructure using PHP and MySQL to organize over 100,000 data entries

Chassis Designer — uWaterloo Solar car team

Sep 2017 – Jan 2019

Solar electric vehicle, designed by students

- Designed a chassis with 19.3% weight reduction over the previous generation while maintaining structural integrity