

Michael Lin

Candidate for BAsC Mechatronics Engineering | University of Waterloo

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Summary of Skills

- Strong knowledge of real time operating system concepts including threads, mutexes, semaphores and segmentation
- ARM cortex robot operating system experience through coursework
- Strong knowledge of C, C++, Java and Matlab
- Web development: HTML, CSS, Bootstrap4, PHP

Projects

Maze solving robot

- Designed circuits for Schmidt triggers, filters, encoders and magnetic sensors
- Soldered through pin capacitors, transistors, resonators, voltage regulators and resistors

Model traffic light system

- Used Arduino to control traffic lights at intersection and pedestrian button

Experience

Automation Systems Engineering — ATS Automation

May 2019 - Aug 2019

Advanced medical device automation manufacturing solutions

- Designed, prototyped and validated an 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
- Performed technical risk assessments for high tolerance automation processes to provide cycle time estimations
- 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 radiuses

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
- Performed collision simulations using ANSYS FEA analysis driven design to optimize impact attenuation