YiLin Liu

Liuyilin.liu@yahoo.com

# Skills Summary

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| * Completed 40 hour machine shop training course using drill press, lathes and mills * Rapid Prototyping using laser cutters, water jet cutter and 3D printers * Construction and debugging of circuit boards using soldering iron, digital multimeter and oscilloscope * MATLAB, C++, Java, R, and Python |

# Work Experiences

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| Max Planck Institute for Solid State Research  Research Intern: Nanoscience and Topological Materials | **May. 2018-Dec 2018** |
| * Debugged and repaired homemade plasma etching apparatus to restore functionality * Increased data processing efficiency through photoshop analysis of room temperature STM images and automated analysis of peak averaging and curve fitting of Raman spectroscopy data * Performed photolithography, plasma etching and graphene fabrication to conduct experiments |
| National Research Council- Data Analytics Center Data Scientist Co-op | Feb. 2017-May 2017 |
| * Tested social media web APIs for availability of data using R to provide recommendations for future research * Exceeded deadlines by completing designated investigations within the first 2 month * Expedited expectations by standardizing addresses and producing interactive density map for machine learning predictions on shipment addresses using JSON, Google Maps API and Overleaf * Minimized manual data collection by writing R script to scrap weather website for updated weather conditions | |

# Technical projects

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| **ENPH Robot Competition (website:** <https://kaitaitong.github.io/pommedeterror/>**)**  ENPH253: Introduction to Instrument Design | Summer 2017 |
| * Built and raced an autonomous robot capable of navigation around an obstacle course, retrieve toy animals and delivery the toys using zip line. * Won first place during competition among sixteen teams * Designed and fabricated chassis assembly. Constructed four iterations using carboard and laser cutter. * Used 3D printer and laser cutter to produce three iterations of claw design. * Designed finite state machine for Arduino to coordinate robot motions. Used encoders and PID control for navigation. | |
| **UBC’s Submarine Team (SUBC) (showcase:** <https://yilinliu123.github.io/COOP/SUBC/index.html>**)**  Frame Sub-Team Co-Lead | **Sept. 2016-Present** |
| * Managed testing and design of aluminum internal frame to improve mechanical stability of mounting and resolve accessibility issues of the hull * Implemented MATLAB code to generate propeller blade curves and airfoil profiles to simplify 3D design * Manufacture 3D print propellers for testing, analyze results and construct propeller using carbon fiber * Basic machining like drilling, tapping, filling and sanding to shape mounts and ensure correct mating | |

# Education

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| University of British Columbia **Bachelor of Applied Science,** Engineering Physics | Sept.2015-May 2020 |
| * Enrolled on Dean’s Honour List since first year * Outstanding International Student Award, Trek Excellence Scholarship and Applied Science International Student Scholarship | |