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YILIN LIU

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EDUCATION

University of British Columbia	**September 2015-Present**
Bachelor of Applied Science: Engineering physics with Mechanical Engineering Specialization *Expected Graduation:* May 2020	

SKILLS SUMMARY

Mechanical	Programming	Electronics	Others
SolidWorks	C++	Oscilloscope	Mandarin
OnShape	Java	Multimeter	Event planning
Lathes, Mills, Drill presses, Standard machining tools	R	PCB design and construction	Excel and Word proficiency
3D Printer, Laser Cutter, Waterjet-Cutter	MATLAB	Function generator	
	Python		

TECHNICAL PROJECTS/ EXPERIENCES

NRC-DAC (Data Analysis Center) — **Feb 2017-April 2017**
CO-OP Student

- Investigated Facebook, Twitter, Google and Flicker API's using R for data collection and processing
- Wrote code to standardize shipping address and visualize location density for delivery company
- Developed test cases to investigate API's feature accessibility, query speed and data availability
- Automated web crawling to get updated weather data and store data in SQL database for weather prediction project
- Version controlled all source code using GitHub
- Presented key findings using markdown for future references
- Received positive feedback from manager and NRC supervisor

ENPH Autonomous Robot Competition — **May 2017-August 2017**
1st Place Team

- Designed and implemented a robot capable of navigating terrain course, collecting animals, and delivering them down a zipline
- Used laser cutter, 3D printer, and *OnShape* for multiple prototypes of claw, zipline delivery system, and chassis design
- Designed and manufactured retrieval system including 3D printed claw and agent location Arduino software, resulting in best reliability amongst all teams
- Soldered and maintained the 2nd working H-bridge for robot for 16V PWM
- Provided supervision and mentorship of *OnShape* for team members

SUBC (UBC's Submarine Team) *Frame team Co-Lead and Propeller team member*	**Sep 2016-Present**

- Manage testing of aluminum internal frame to improve mechanical stability and resolve accessibility issues of the hull.
- Prototype scale models using steel and aluminium, 3D printed connectors and load calculations to validate concept
- Lead weekly meetings, manage projects assigned to members; provide mentorship for new members regarding design decisions and solid works
- Drafted rough propellers for cost estimates
- Researched into potential propeller designs and coating substances to reduce drag
- Performed propeller angle calculations and modeled propeller using surface modelling
- Used files, taps, drills, and Dremel to shape mounts and ensure correct mating of components
- Worked with fiberglass and epoxy to secure mounting and attaching structural foam for buoyancy

Programming Experiences	**Jan 2015-Present**

- Implemented height sensing claw with error filtration using Sonar and Arduino
- Achieved the most 97.8% satisfaction of a rain water collection by simulating the rainfall data calculations using C++
- 3 years of Java experience within school courses and worked on projects such as implementing sorting algorithms, brute forced knight's tour, Sudoku solver via linked grids, and text display restaurant simulation game.
- Familiar with using MatLab to work with random walks, linear transformations, eigenvectors and simple neural networks.
- Various java projects such as designing and implementing an imaginary world with intelligent AIs, simulation of guitar sounds and implementing mathematical graphs.

HOBBIES:

EWB Fairtrade volunteer and Venture Lead (UBC-Vancouver)	**Sep 2015-Present**

- Responsible for leading Fairtrade Venture in the upcoming year, including year planning, member recruitment, event planning and communication with president, other venture leads and sponsors
- Planned the fair-trade campus week resulting in over 300 attendees and 2 companies hosting events on campus

Beginner Baker	**Sep 2017- Present**

- Banana bread for bake sale which sold out in the first 30 minutes, raising a net profit of 30 dollars for 15 slices of banana bread
- Lemon loaf which was devoured by roommates in a span of 30 minutes
- Planning on expanding baking skills by making cookies, muffins, and ultimately a beautiful, fluffy soufflé