THE UNIVERSITY OF BRITISH COLUMBIA

Engineering Co-op Program
Faculty of Applied Science
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Daniel Raw

Chemical & Biological Engineering

TECHNICAL SKILLS

Practical
- Metalworking (Lathe, Mill)
- Carbon Fiber Layups
- Soldering
- Woodworking
- Concrete

Chemical
- Titrations
- Glycerin Refinement
- Magnesium Oxide Battery
- Aluminum Oxide Battery
- Hydrogen Electrolysis

Additional
- Class 7 Driver's License (N)
- WHMIS Certified
- Microsoft Excel Proficient
- Machine Shop Trained
- Waterjet & Solidworks Experience

ACADEMIC & CO-OP STATUS

Academic Program
- Chemical Engineering; 6 of 8 academic terms completed
- Anticipated date of graduation: Dec, 2019

Co-op Status
- Completed 2/5 work terms; available for 4 months beginning May, 2018

CO-OP WORK EXPERIENCE

UBC (Vancouver, BC) **May, 2017 – Dec, 2017**

Research Assistant
- Researched advanced physics & chemical principles and designed experiments to demonstrate them
- Obtained machine shop certification for lathes, mills and the waterjet
- Gained experience using Solidworks modelling for the waterjet
- Used Microsoft excel for spread sheeting and experimental calculations
- Attained confidence working independently in a lab

TECHNICAL PROJECTS

Hydrogen Fuel Generator **May, 2016 – Present**
- Building a Hydrogen Fuel Generator that operates through the electrolysis of water
- Worked with the waterjet and Solidworks to fabricate the generator plates and connector straps

Superconducting Magnet Track **May, 2017 – Sept, 2017**
- Built a parabolic neodymium magnet track that demonstrates the magnetic levitation of a superconductor
- Also can be used to show the conservation of energy in a pendulum, with some losses due to air resistance
- Worked with various tools in the machine shop including a stamp, vice cut, mill and the waterjet

ENGINEERING STUDENT TEAMS

Chemical e-Car **Sept, 2015 – May, 2016**
- Designed a shoebox sized car that will function completely on chemical reactions
- Standardizations and titrations are necessary to determine concentrations of various solutions which are used in spectrophotometry
- Refined glycerin from waste bio-fuel
- Provided insight into chemical processes and innovation

- Built a magnesium oxide battery to provide energy to the car, and compared its benefits to an aluminum oxide battery

Supermileage Team **Sept, 2014 – May, 2015**

- Built two cars that would be as efficient as possible and would compete in the Shell Eco-Marathon
- Drafted a handbrake that would serve as the level operating the emergency brake on the chassis
- Provided insight into creating parts in Solidworks
- Designed the brake line that would serve as the main brakes for the chassis
- Learned how to lay carbon fiber, solder, and secure components onto the chassis

OTHER WORK EXPERIENCE

Indigo Books **Sept, 2013 – Sept, 2014**

Customer Service Representative

- Helped make recommendations to customers seeking specific products
- Provided aid to customers confused about the store layout
- Worked on communications skills due to many ESL customers
- Provided cashier relief

College Pro **June, 2015 – Aug, 2015**

Technician

- Travelled to different sites to provide housing services such as painting and roofing
- Extensive ladder experience

VOLUNTEER WORK EXPERIENCE

Grant Connell Tennis Center **Sept, 2011 – Sept, 2012**

Instructor

- Instructed a group of 11-14 year-olds on more advanced techniques and stratagems
- Participated in program planning with senior advisors
- Provided guidance to tournament participants

EDUCATION

University of British Columbia **Sept, 2014 – Dec, 2019**

Bachelor of Applied Science - Chemical Engineering, Processing
Additional courses in General Relativity and Quantum Mechanics

AWARDS

Gold Medal at Western Canada Games (Tennis)	2011
Principals List (High-School)	2014
Ranked #1 in Canadian Juniors Tennis	2012
Provincial Scholarship Award	2014

PROFESSIONAL AFFILIATIONS

Student Member - APEGBC 2016 - Present

ACTIVITIES AND INTERESTS

- Tennis, Mountain Biking, Hiking
- Guitar, Music
- Chemistry, Nuclear Physics, Superconductivity