Jacob Morrison

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EDUCATION

Master of Applied Science, University of British Columbia, Vancouver BC, Canada

Expected August 2020

- Research based degree in Mechanical Engineering with a focus on control theory and machine learning
- Worked in the Control Engineering Laboratory under the supervision of Dr. Ryozo Nagamune
- Perfect Cumulative GPA of 4.33/4.33, Received department scholar designation
- NSERC CGS-M Award – $17,500

Bachelor of Applied Science, Queen's University, Kingston ON, Canada

April 2017

- Engineering Physics major with a Mechanical Engineering sub option
- Cumulative GPA – 4.13/4.3, Dean's Scholar 2014, 2015, 2016, 2017, First Class Honours
- Principal's scholarship 2013, 2014 – $4000/year
- H. Arnold Cowan scholarship 2016 – $3000

EMPLOYMENT AND RELEVANT EXPERIENCE

University of British Columbia, Vancouver BC, Canada

Graduate Research Assistant **September 2018–Present**

- Research Assistant in the Control Engineering Laboratory, assisting in the facilitation of various laboratory activities

University of British Columbia, Vancouver BC, Canada

Graduate Teaching Assistant **September 2018–Present**

- Leading in class tutorials, software studio sessions and laboratory sessions, holding weekly office hours, and marking and providing instructive feedback for students in a second year course on electrical circuit analysis, a second year software course on Matlab and Arduino, a first year course on multivariate calculus and a fourth year course on automatic control

CEA, Saclay, France

Research Engineer with NEWS-G research group **September 2017–August 2018**

- Worked towards streamlining and integrating the electronics as well as the data acquisition and analysis software associated with the operation of a spherical gaseous dark matter detector with the goal of developing a fully portable detector for use in a broader spectrum of particle physics applications as well as for education and outreach

Queen's Space Engineering Team, Queen's University, Kingston ON, Canada

Chief Financial Officer and Team Member **April 2016–June 2017**

- Worked closely with the team's CEO and sub team heads to decide how best to allocate funds for various equipment and travel needs and to complete grant applications to fund both a rover and a satellite project
- Directed the sponsorship team, approved all team spending, and participated in weekly design meetings

- Managed a $70,000 budget, tracking all cash flows and updating team executives on the status of the budget in bi-weekly meetings
- Travelled to the University Rover Challenge at the Mars Society's Desert Research Station in Utah, where the team finished 1st in Canada, 3rd in North America, and 6th in the world out of 82 participating schools, in order to assist with prepping the team's mars rover for competition

Queens University, Kingston ON, Canada

Research Assistant with SNO Lab research group **May–August 2016**

- Worked in a research group under Dr. Gilles Gerbier to conduct research and development on a spherical gaseous detector to be implemented at SNO Lab for the purpose of detecting dark matter in the form of very low mass weakly interacting massive particles (WIMPs)
- Analyzed data from a prototype detector using both python and C++ to determine peak location, gain stability and electron drift time under various conditions
- Developed a python script simulating the theoretical response of alpha particles in the detector
- Awarded Charles Allan Thompson undergraduate student research award - $4500

McMaster University, Hamilton ON, Canada

Research Assistant in Microrobotic Flight Laboratory **May–July 2015**

- Worked under a post-doctoral fellow to develop wings for use in microrobotic flight applications
- Interfaced new lab equipment with the control system, using python to deliver SCPI command strings to the instruments so as to function cohesively with the rest of the lab
- Developed image processing code using python to analyze input jpeg images of a flapping wing and determine the amplitude of the wings motion

SKILLS AND INTERESTS

- **Skills:** Strong problem solving and critical thinking skills demonstrated by high academic standing; Effective communication skills tailored to leadership in a group setting
- **Computer Programs/Programing:** Proficient in Matlab, Python, Julia, C++, C, LabVIEW, Arduino, Verilog, SolidWorks, COMSOL Multiphysics, Microsoft Office Suite
- **Languages:** English, French
- **Interests:** Travel, Intramural/men's league hockey, basketball, and soccer, Experienced snowboarder and canoe tripper, Former competitive hockey player from age 9-18 (2004-2013),
- **Volunteering:** Queen's University Science Formal 2016, Queen's University Fix n Clean 2015, Burlington YMCA 2011