Brian McCrindle

McMaster B.Eng. Engineering Physics

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Skills

Programming	MATLAB, Python (OpenCV), NI LabVIEW, PostgreSQL, C/C++, R
Design	Autodesk Inventor, Autodesk EAGLE, Simulink, NI Multisim
Technology	Git/Github, Atlassian, Windows, LINUX OS, Microsoft Office Suite, LaTeX

Professional and Volunteer Experience

May 2017 – June 2018 | **Electro-Optical Designer (Co-op), L3 Wescam, Burlington, Ontario**

- Primarily responsible for testing complex Electro-Optical assemblies such as infrared imaging systems, laser rangefinders, low-light/daylight digital cameras, and advanced machine vision based tracking algorithms
- Developed version controlled MATLAB tools for laser rangefinder simulations, EO/IR sensor alignment, and image processing
- Streamlined Electro-Optic line of sight testing and documentation procedures to reduce production downtime and increase company output

MATLAB | Python | PostgreSQL | EO/IR Sensor Systems

March 2016 – April 2017 | **Community Advisor, McMaster Residence Life, Hamilton, Ontraio**

- Facilitated a positive, inclusive community within a residence at McMaster University
- Planned and executed residence-wide events surrounding personal, academic, and community growth
- Delivered presentations to the Residence Life team regarding diversity, inclusivity, and suicide-prevention

Event Planning | Community Engagement

May 2016 – August 2016 | **Undergraduate Research Assistant, McMaster Engineering Physics, Hamilton, Ontraio**

- Conducted research alongside graduate students to obtain experimental data of the fluid flow inside of a scaled down CANDU calandia using a class IV PIV laser system
- Developed a comprehensive LabVIEW program to control and monitor fluid flow and temperature parameters within the system
- Conducted quality assurance tests and wrote corresponding standard operating procedures (SOP)

NI LabVIEW | Nuclear Engineering | Energy Systems

May 2018 – April 2019 | **MSU Maroon, McMaster Students Union, Hamilton, Ontraio**

- The Maroons are a unique MSU service that works to connect the undergraduate student population to the McMaster Students Union (MSU) and the rest of the McMaster community. As representatives of the MSU, we provide students with information, opportunities and resources to get involved with the various services and business within the MSU. We aim to be the carriers of Marauder spirit on campus, and within the community, through the promotion and organization of countless events to express school pride and unity.

Leadership | Community Engagement and Outreach | Event Planning

May 2018 – April 2019 | **Engineering Physics Society President, McMaster Engineering, Hamilton, Ontraio**

- As the McMaster Engineering Physics President, my role is to provide a connection between the Engineering Physics Department and the undergraduate students within the program. I oversee the VP Academic, VP Finance, VP Communications, VP Social, and other involved members within the society. The society is a board of Engineering Physics students who are passionate about the program and look to provide more resources, support, and community for students within the department.

Event Planning | Community Engagement

August 2015 – August 2018

McMaster Welcome Week Representative, McMaster Residence Life, Hamilton, Ontraio

- Over the course of the first week of the academic year, otherwise known as 'Welcome Week', successfully chosen upper year students are made to be representatives for the incoming first year students. The responsibilities over this week vary from planning events and group scheduling, to providing emotional support for students having a difficult time making the University transition. I was admitted for this highly competitive position three years in a row.

Event Planning | Community Outreach

September 2015 – April 2016

MSU SWHAT, McMaster Students Union, Hamilton, Ontraio

- The Student Walk Home Attendant Team (SWHAT) is a volunteer service within the McMaster Students Union that will walk or bus with students during the evening and night hours 7 days a week. No matter the weather, walkers will accompany students to their destination to provide both company and safety.

Community Engagement

Education

2019-2021 Thesis

Master of Applied Science, Electrical Engineering, McMaster University

Applying Deep Ensemble Learning to Quantify Predictive Uncertainty and Traumatic Brain Injury Classification Trust using Deep Convolutional Neural Networks.

2014-2019 Highlighted Coursework

Bachelor of Engineering, Engineering Physics, McMaster University

Bayesian Inference, Introduction to Probability, Semiconductor Devices, Advanced Applications of Quantum Mechanics, Modelling of Biological Systems, Imaging in Medicine and Biology

Projects

nanoRIMS 2018 - 2019

github.com/brianmccrindle/volumeapproximation 4A06 Capstone Project Gallery

nanoRIMS is a bench top solution for the automated synthesis and optical characterization of gold nanoparticles. Aspects of the project included Python and OpenCV for image processing based fluid volume approximations, thermal control systems, fluid pumping schemes, and diffraction based optical characterization. The project is in support with Dr. Leyla Soleymani and her lab's ongoing work with Biosensing.

Python | OpenCV | Biosensors | Nanoparticles

McMaster Interdisciplinary Satellite Team // Attitude and Determination Control Specialist 2016-2017

http ://mcmasterneudose.ca/

The McMaster Interdisciplinary Satellite Team (MIST) is a group of McMaster University students that is currently designing, fabricating, and planning to launch a small satellite (CubeSat) into low earth orbit in order to study the effects of ionizing radiation on the human body. Was responsible for advanced MATLAB simulations for passive magnetic satellite stabilization.

Control Systems | MATLAB

twiki 2014

github.com/brianmccrindle/twiki

Created during the McMaster University DeltaHacks Hackathon, twiki is a free SMS-based service that gives an individual the ability to learn about any topic available on Wikipedia. With the idea to bring information to poorer nations where a cellular network is more accessible than an internet connection, twiki gives the power of knowledge back to the people.

Java | Maven | Heroku