

Richard Moulton

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Education

PhD in Electrical & Computer Engineering, Queen's University 2018-Present

Thesis: Modelling Intelligent Actions in Human Motor Control

Developed simulations using MATLAB and analysed large time series datasets recorded by an exoskeleton robot tracking human movement in order to understand the limits on rapid motor behaviours.

Courses of Interest: Control of Discrete-Event Systems, Modern Control Theory, Reinforcement Learning

Master of Computer Science, University of Ottawa 2016-2018

Thesis: Clustering to Improve One-Class Classifier Performance in Data Streams

Investigated anomaly detection in evolving data streams, using contexts and unsupervised learning to produce new anomaly detection frameworks.

Courses of Interest: Parallel Algorithms and Applications in Bioinformatics, Data Mining and Concept Learning, Data Management for Business Intelligence, Learning Systems from Random Environments

Awards: Won the Best Student Data Mining Paper Runner Up at ECML-PKDD 2018 and the Canadian AI Association's 2019 Best Master's Thesis Prize.

Bachelor of Science, Honours Computer Science, Royal Military College of Canada 2006-2010

Honours Project: A Web-Based Implementation of a Topics Computation Agent

Minor in Mathematics. Completed RMC's four pillars: academics, bilingualism, leadership, and fitness.

Professional

Programmer, HAS-Motion 2022-Present

Working independently with C++ and Qt to continue the ongoing development of Inspect3D, a software tool for managing and analyzing large motion capture datasets.

Teaching Assistant, Queen's University 2018-Present

Head Teaching Assistant (ELEC270 Discrete Mathematics with Computer Engineering Applications W21). Transformed course's 12 tutorials for remote delivery and active learning. Organised and delivered weekly synchronous tutorials and provided feedback to ensure student success.

Teaching Assistant (ELEC270 W19, W20, W22; MNTC313 Introduction to Programming F20). Delivered tutorials remotely and in-person, and evaluated students. Topics included: combinatorics, sets, and mathematical reasoning (ELEC270); and data structures and control statements in C++ (MNTC313).

Aerospace Control Officer, Canadian Armed Forces 2006-2016

Standards & Training Officer (Nov 2013-Jun 2016). Joined the Canadian Space Operations Centre during its inception. Led my team in developing the unit's first operational course, resulting in a qualification standard, training plan, and 30+ lesson plans. Established both continuation training and

professional development programs to develop the CAF's space cadre. Coordinated with another team to develop the unit's operating procedures, establishing standards for space operations. Deployed on Op FOUNDATION as the first Canadian Space Operator to work in the United States Air Force's AFCENT Combined Air Operations Center (Jun-Dec 2015).

Weapons Director Instructor (May-Oct 2013). Instructed in classroom, simulator, and live-fly scenarios, ensuring that trainees earned operational qualifications as military aerospace controllers.

Weapons Director (Feb 2011-May 2013). Controlled military aircraft at the Canadian Air Defence Sector, contributing to Canadian air sovereignty. Deployed on Op FOUNDATION with the United States Air Force's 71st Expeditionary Air Control Squadron (Jul 2012-Jan 2013).

Trainee/Officer Cadet (Jun 2006-Aug 2011). Completed military courses and training.

Community

Co-organizer, Writ Large Creative Writing Group Jul 2019-Present

Recruited new members, organised monthly critique circles, and given writing workshops as part of a writing group focused on supporting local writers from their first idea to a complete manuscript.

Tutor, Pathways to Education Kingston Sep 2018-Apr 2021

Tutored students at the high school and college level to support Pathways to Education's vision of breaking the cycle of poverty through education.

Data Analyst, Pathways to Education Kingston Oct 2018-Mar 2019

Performed quantitative analysis of program outcomes for the Pathways Kingston Evaluation Team, helping to determine the program's strengths and inform plans for future expansion.

Shared my experience as a TEDxQueensu Salon speaker and as a guest speaker at Shad Queen's in 2019.

Open Source Contributor, Massive Online Analysis May 2017-Apr 2019

Contributed open source implementations of machine learning algorithms in Java for Massive Online Analysis (MOA), the most popular open source framework for data stream mining.

Chairperson - Evening Section Committee, RA Curling Club Aug 2017-Apr 2018

Administered activities, programs and events along with the Evening Section Committee for 230+ curlers across 7 leagues. Sat on the club's Executive Committee to help administer the RA Curling Club as a whole.

Convenor, RA Curling Club May 2016-Apr 2018

Scheduled games, administered spare player list, and accounted for funds for a 10-team league.

Other

- Bilingual English and French. Proficient in both verbal and written communication.
- Proficient in Python, C++, Java, R, and MATLAB.
- Experienced using Github to organise teams and contribute to open source projects.
- Qualified as an Aerospace Controller Instructor in 2013.
- Represented Canada at the 27th NATO Chess Championship in 2016.
- Earned Certificate in Professional Development in University Teaching and Learning in 2021.