JAMES FRASER
jfrase09@uoguelph.ca
(519)-871-6078
https://ca.linkedin.com/pub/jamey-fraser/6/871/7a4
Dartmouth, Nova Scotia, Canada

Education

2023 *University of Guelph - Guelph, Ontario*
PhD in Computational Science
LOA: Fall 2021-Winter 2023 (Sessional Teaching and external work)
GPA: (4.0)

2012 *University of Western Ontario - London, Ontario*
MSc in Computer Science
Interactions
GPA: (4.0)

2006 *Saint Mary's University - Halifax, Nova Scotia*
Honors Bachelor of Science: Computer Science
GPA: (3.75)

Thesis and Dissertations

2023 ***Ph.D. Thesis:*** *Learning to Code: Examining Student Profiles in Novice Programming.*
Co-Supervision: *Dr. Judi McCuaig and Dr. Dan Gillis*
Research: *Machine Learning, Artificial Intelligence, Student Modeling, Educational Data Mining*

2012 ***MSc Thesis:*** *Game Challenge: A Factorial Analysis Approach*
Co-Supervision: *Dr. Michael Katchabaw and Dr. Robert Mercer*
Research: *Adaptive Gaming, Artificial Intelligence, Human-Computer Interactions*

Programming Skills

- *Main Languages: C/C++, Python (10+ Years)*
- *Frameworks: Pandas, Numpy, Scikit-Learn, Qt, NLTK, OpenCV*
- *Web Frameworks: NodeJS, Javascript, jQuery, React, AngularJS*
- *Database and Tools: MySql, Reddis, MongoDB, Docker, GIT, Jenkins*
- *Other Keywords: CI/CD, RESTful, API, GIT, HTML, JSON, CSS*

Professional Experience

2020-2023 Western University - Software Developer and Research Support II

- *Lead Developer for Research Team (2-3 programmers).*
- *Consulting with multidisciplinary teams of medical professionals, developers, and researchers.*

- *Co-authored 12 research papers on the impact of COVID-19 on family workload, sexuality, anxiety, and depression - responsible for survey processing algorithms and analyses.*
- *Key Development Projects included:*
- *Developed a cutting-edge Telehealth application to track patient's range of motion and evaluate physiotherapy progress.*
- *Oculus Rift game to gamify physical therapy and evaluate patient rehabilitation with rotator cuff injuries.*
- *Designed the processing platform and algorithms for a virtual diagnostic tool for Carpal Tunnel Syndrome (which led to a PhD and 5 publications for the trainee)*
- *Data analytics platform to extract COVID-19 patient data related to family workload, anxiety, and depression.*

2016-2018 University of Guelph - Lead Developer/Researcher

- *Developed a research platform (IFS) to evaluate student learning.*
- *Managed a team of junior software developers, including MSc students and co-ops.*
- *The experiment website ran for four years and supported five graduate degrees.*

2012-2016 Christie Digital Systems - Application Software, Software Developer

- *Front-end development using C++/Qt/Web for digital cinema and visual solution projectors and touch panels.*
- *Team Scrum Master for Agile process and organized software development team sprints.*
- *Professional software development continuous integration build system, unit testing, code reviews, and constant QA validation.*
- *Developed a JSON RPC communication system for the company's projectors and client interfaces.*
- *Website development for smart canvas applications.*
- *Development iOS awarding-winning projector remote applications.*

2013-2016 Christie Digital Systems - Research Software Developer

- *Research and development of patented projection mapping prototype.*
- *Projection Mapping system presented at significant conferences (SIGGRAPH and ISE).*
- *Focused on machine vision techniques, 3D reconstruction, and projection mapping.*
- *Developed prototypes for facial and demographic recognition systems.*
- *Implemented advanced research algorithms for camera orientation in projection mapping.*

2008-2011 Big Blue Bubble - Game Programmer

- *Lead Programmer: released 6 iPhone/iPad Games (Fighting Fantasy Series)*

- *Programmer: Developed two games for the Wii and 2 for PC.*
  - *Developed tools for the company's PC division.*
  - *Produced 2D and 3D video games.*

2002-06 *Research In Motion - Order Processing Representative*

Patents

2018 *System and method for automatic alignment and projection mapping (US 10089778 B2)*

2015 *System and method for automatic alignment and projection mapping (US 20180338123 A1)*

Teaching Experience

2017- *Sessional Lecturer - University of Guelph*
Instructor for undergraduate Computer Science and Mathematics courses.

2016-2021 *Teaching Assistant - University of Guelph*
Instructing courses in Computer Science and Mathematics

2016-2018 *Content Developer - University of Guelph*
Develop and organize content for undergraduate courses.

2006-2008 *Teaching Assistant - Western University*
Instructing courses in Computer Science and Mathematics

2002-2006 *Teaching Assistant - Saint Mary's University*
Instructing courses in Computer Science and Engineering

Publications and Conference Research Areas

2023- *1 Publication and software application*
Topics: Evaluating patient biomechanics and sports analytics
Lead Researchers *James Fraser and Ze(Steve) Lu*

2019- *2 Publications, 3 conference presentations, and PhD Defense.*
Topics: Educational Data Mining, machine learning, and student modelling.
Lead PI *Dr. Judi McCuaig*
Lead Researcher *James Fraser*

2021- *12 Publications, several presentations, and posters.*
Topics: Impact of the COVID-19 pandemic, mental health, rotator-cuff, and carpal tunnel syndrome.
Lead PI *Joy C MacDermid*
Lead Researcher *Hoda Seens*

2016 *ACM SIGGRAPH Presentation and Patents*
Team Lead *Kevin Moule*

2013 *2 Publications, 2 Conference Presentations, MSc Thesis*
Topics: Adaptive gaming, machine learning, and user modeling.
***Lead PI:** Dr. Mike Katchabaw*
***Lead Researcher:** James Fraser*

Achievements

2017-2022 *(NSERC CGS-D) Canada Graduate Scholarships (University of Guelph)*

2016-2018 *Ontario Graduate Scholarship (OGS) (University of Guelph)*

2016 *Achievement Scholarship Graduate Studies (University of Guelph)*

2006-2008 *Achievement Scholarship Graduate Studies (Western University)*

2002-04 *Dean's List for Academic Achievement (Saint Mary's University)*

Service Experience

2017-2020 *School of Computer Science Faculty Council*

2017-2020 *Graduate Teaching Community (GTC) Guelph*

2018 *Graduate Student University Teaching Conference Committee*

2017-2018 *Graduate Curriculum Council Committee*

2017-2018 *Admissions and Progress Committee*

2016-2018 *Entertainment Computing Elsevier Peer Reviewer*

2017 *Cybersecurity Faculty Search Committee*