

Education

- **University of Toronto** Toronto, ON
Ph.D., Institute for Aerospace Studies September 2016 - Present
- **University of Toronto** Toronto, ON
M.Eng., Institute for Aerospace Studies January 2014 - June 2016
- **Western University** London, ON
B.Sc., Physics September 2009 - April 2013
- **Western University** London, ON
B.E.Sc., Structural Engineering September 2007 - April 2013

Research Interests

- **Bayesian “Robust” Optimization** September 2016 - Present
I mainly focuses on the development of efficient probabilistic approaches to sequential decision making under uncertainty. This work extends Bayesian optimization to cases where the input parameters governing the objective function are uncertain.
- **Data-Driven Particle Swarm Optimization Using Surrogates** September 2015 - June 2016
In this project I developed a particle swarm optimization algorithm to be used in an internal code in the Computational Modeling and Design Optimization Under Uncertainty Group at the University of Toronto. This code would apply a naïve approach to optimize a Gaussian process regression model.

Work Experience

- **Researcher, Numeric Methods Group, Pratt & Whitney Canada** May 2017 - Present
Within a team of computer scientists, physicists and engineers, I plan to benchmark an in-house machine learning code against some of the routines in scikit-learn. I will also be testing a new Gaussian process algorithm on a very large dataset. Further, I will Implement a Bayesian style optimization algorithm to design engine components.
- **Tutor, Skule, University of Toronto Engineering** Ongoing since Feb 2014
Instructed undergraduate engineering students in the department of engineering science at the University of Toronto. The topics I covered were structural engineering, calculus and physics.
- **Consultant, Focal Healthcare** July 2016 - Jan 2017
Working with a team of medical professionals, scientists and engineers I implemented an automated system to validate patient information being input into DICOM databases using C#. This system is intended to streamline the use of a cancer detection device for medical practitioners in Canada and the United States.
- **Contractor, Compressor Engineering, Pratt & Whitney Canada** Aug 2015 - Jan 2016
Within a team of engineers I applied Gaussian process inferencing to predict the lifespan of aircraft engine components. I then verified this analysis with test data obtained through physical experiments.

Skills

Languages: C++, C#, Python, MATLAB, HTML

English, French

Operating Systems: Linux, Mac OS X, UNIX, Windows

Open Source Projects

2015–Present Gitlab, GitHub