

Education

University of British Columbia

April 2022

MSc. in Mathematics, GPA: 87%

Courses: Applied Machine Learning, Machine Learning, Advanced Machine Learning, Probability, Stochastic Processes

Awards: NSERC Canada Graduate Scholarship - Master's (CGS-M), Faculty of Graduate Studies Award

University of New Brunswick

December 2019

BSc. Honours in Mathematics-Physics, GPA: 4.0/4.3

Courses: Probability & Statistics, Numerical Methods, Computational Physics, Measure Theory

Awards: NSERC Experience Award, Arthur & Sandra Irving Primrose Scholarship, and more

Work Experience

Head Teaching Assistant

2020-present

Mathematics Department - University of British Columbia

- Leader for all TAs of UBC's Differential Calculus course. Was also previously a Graduate TA for an Applied Linear Algebra course.
- Received consistently high reviews from student evaluation surveys for ability to explain complex mathematical concepts in simple, understandable language.

Assistant Physicist

2017-2021

C-Therm Technologies

- Gained proficiency in scientific software development in Python by designing and implementing regression algorithms to extract thermal properties from experimental curves.
- Significant bottom-line impact as the sole developer of the "Flex TPS" regression algorithm, which is now one of their core test methods and retails for \$9,100.
- Performed mathematical R&D on other unreleased projects, which resulted in a publication.

Projects

- **Supervised Outlier Detection:** Ensemble model to predict goals scored by NHL players (cross-validation MAE of 1.6 goals). Involved significant preprocessing of data from moneypuck.com. Deployed on <https://outlierdetectionnhl.herokuapp.com> as a Plotly Dash application.
- **Master's Thesis:** Quantum Hall effect; proving bulk-edge correspondence in interacting lattice systems. Uses mathematical tools such as functional analysis, spectral theory, and operator algebras.
- **Publication with C-Therm:** Temperature Fields Generated by a Circular Heat Source (CHS) in an Infinite Isotropic Medium: Treatment of Contact Resistances with Application to Thin Films, International Journal of Heat and Mass Transfer 137:677-689 (April 2019).
- **Others/Where to View:** More projects on personal website, <https://justin-furlotte.github.io>.

Skills

Programming Languages: Python, Julia, C#, Matlab

Libraries/Tools: Scikit-Learn, NumPy, SciPy, Pandas, Matplotlib, Jupyter, Plotly, Dash, Git, LaTeX