

Kyle M. Booker

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Education

University of Waterloo

M.MATH IN APPLIED MATHEMATICS

Waterloo, Ont.

Sept. 2018 — April 2021

- Thesis: H(div)-conforming discontinuous Galerkin methods and applications for multiphase flow.

Thompson Rivers University

B.S. IN COMPUTING SCIENCE AND MATHEMATICS

Kamloops, B.C.

Sept. 2014 — June 2018

- Cumulative GPA: 4.10 / 4.33.

Skills

Programming Python, C, C#, C++, Java, R, SQL, HTML, JavaScript, PHP, MATLAB

Other AWS, Git, Anaconda, WordPress, TensorFlow, Paraview, SciPy, pandas, LaTeX, Linux

Languages English, Chinese (Beginner)

Experience

Graduate Research Assistant

University of Waterloo

SUPERVISORS: DR. SANDER RHEBERGEN AND DR. NASSER ABUKHDEIR

Sept. 2018 — April 2021

- Developed Python, C++, and MATLAB code for computational fluid dynamics and scientific computing.
- Held weekly scrum-style meetings with ten graduate students in both the department of applied math and chemical engineering to enable us to trade best practices and access a wider range of research outcomes.
- Periodically gave talks to both departments on emerging technologies in the field of research.
- Collaborated with a group of three other graduate students to work on problems in computational fluid dynamics.
- Developed unit tests to be used against my code and other code in the lab and provided clear documentation.
- Post-processed numerical simulation data with SciPy, which provided accurate analysis for chemical engineering companies.

Undergraduate Research Assistant

Thompson Rivers University

SUPERVISOR: DR. YANA NEC

May 2018 — Aug. 2018

- Co-authored a published paper and gave a talk at the Canadian Undergraduate Math Conference.
- I improved readability and functionality on legacy code written in C for the accessibility of future students.
- I automated programs using Bash scripts to run concurrent simulations, resulting in less time producing data.

Undergraduate Research Assistant

Thompson Rivers University

SUPERVISOR: DR. RICHARD BREWSTER

May 2017 — Aug. 2017

- I wrote algorithms with Python resulting in proving theorems in graph theory.
- Co-authored a published paper and gave a talk at the Canadian Undergraduate Math Conference for over fifty math students.

Extracurricular Activities

Personal Projects

University of Waterloo

WEBSITES AND SPOTIFY RECOMMENDATION PLAYLIST

Sept. 2019

- Developed static and dynamic websites using AWS for personal projects and events.
- Developed a Spotify recommendation playlist using machine learning.

Piano Performance

Kamloops, B.C.

ASSOCIATE DIPLOMA OF THE ROYAL CONSERVATORY OF MUSIC (ARCT)

Sept. 2007 — March 2021

- Performed as solo pianist with the Symphony of the Kootenays.

Volunteer

Kamloops, B.C.

PROGRAMMING AND MUSIC

Sept. 2010 — August 2018

- Volunteered once a week at the University's computer labs, helping students understand first-year programming material.
- Provided piano accompaniment for my high school choir and local churches and composed original score music for a local musical.

Scholarships & Awards

2020 NSERC Alexander Graham Bell Canada Graduate Scholarship - Masters

Waterloo, Ont.

2018 NSERC Undergraduate Student Research Award

Kamloops, B.C.

2017 NSERC Undergraduate Student Research Award

Kamloops, B.C.

Publications

Edge-coloured graph homomorphisms, alternating paths and duality

Journal: JCMCC

CO-AUTHOR: DR. RICHARD BREWSTER

Accepted for publication

On accuracy of numerical solution to boundary value problems on infinite domains with slow decay

Journal: Mathematical Modelling of Natural Phenomena

CO-AUTHOR: DR. YANA NEC

April 2019