CODY GRIFFITH

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Mathematical Research Scientist

Summary

After about a decade of honing my applied mathematics I have developed the tools, experience and programming knowledge to make myself useful to any field of analysis. I am a research scientist in mass spectrometry where I specialize in developing algorithms for internal use as well as for customer-grade products. My hope is to continue to broaden my skill set and work towards making a positive impact both at the industry/research level but also towards social good.

Education

2016 - 2018
M.Sc in Applied Mathematics
University of British Columbia

2012 - 2016
B.Sc in Applied Mathematics
Metropolitan State University of Denver

Work experience

December 2018 - Current
Research Scientist
908 Devices
New to the realm of mass spectrometry, I quickly learned how to build efficient algorithms for the data-rich orbit-trap mass spectrometers. I soon was tasked with anticipating potential customer use cases and participated in UI/UX design for analysis software. While building new products, I was also in charge of maintaining current device platforms and functionality while bringing new features into software updates. Along with maintenance, I gave expert analysis for in-field device data reachback. All of this together taught me important facets of business development on top of algorithm design.

May 2018 - October 2018
Research Scientist
Data Science for Social Good (UBC)
As a means of applying my skills that would have a maximal impact on my community, I took part in a data science initiative to help the nearby city of Surrey understand the pitfalls in addressing childhood vulnerabilities. This project lasted a summer and led to unique collaboration with Microsoft Vancouver and culminated in a paper and a platform to combine city data, public census data, and the unique Early Childhood Instrument (EDI). This platform has been since utilized by Surrey and there is a follow-up project underway to expand on our findings.

Sept. 2016 - May 2018
Research/Teaching Assistant
University of British Columbia

As part of my training at the Master's level, I continued developing my teaching skills while taking on grading duties, leading in class activities and proctoring exams as a teaching assistant. But as a research assistant, I learned how mathematical research was done and further developed my ability to communicate high level ideas. I had gained insight into a various selection of methods and developed new approaches and methods in my research area.

Jan. 2015 - Aug. 2016

Lead/Private Tutor

Metropolitan University

To facilitate my growth in mathematics, I started tutoring. Overtime I had become the lead tutor in my universities tutor lab, a tutor in a mathematics specific lab and even a private tutor. As a lead, I trained and guided new tutors in their respective fields. As a private tutor, I was getting recommended from all labs I had worked with and soon had too many clients. I could teach any math course taught at my university as I had taken nearly every course offered.

Projects

- Formed the basis of analysis on a two-dimensional dynamical system with strange bifurcating behavior.
- Partnered with Data Science for Social Good to create a central database and platform to analyze this to explain childhood vulnerability in the city of Surrey.
- Used Spatial & Temporal Analysis to help Groundwork Denver to model E-Coli trends in a local river.
- Placed meritorious winner in 2016's Mathematical Competition in Modeling (MCM).
- Presented at JMM 2016 on computational and theoretical extensions to topics in Linear Algebra.
- Established a sequence of independent studies to develop a personalized and interest driven track: Functional Analysis, Discrete Wavelet Transformations, Advanced Linear Algebra, and Measure Theory.
- Developed a method of analysis on a Dual-Capacity Stochastic Queue. Then, presented this work at the 2015 MAA regional conference in Colorado Springs as well as at the Undergraduate Research Conference in Denver.

Skills

- Extensive programming with Mathematica, R, Matlab, Python and Julia
- Intensive critical thinking and problem solving honed along with Mathematics
- Ability to manage projects and experience leading a team
- Significant use of document preparation in Latex, Markdown, Overleaf and Microsoft office
- Familiar with slide preparation via Latex (beamer) or Powerpoint
- Well versed in source control and project work (Dropbox, Github, Subversion)
- Experience with the Cloud Network and other online data storage

Referees

Dr. Rachel Kuske
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Chair of Mathematics
Georgia Technical University
Master's thesis supervisor.

Dr. Elizabeth Ribble
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Chair of Mathematics
MSU Denver
Advising professor for my data science projects.

Dr. Chris Harder
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Professor of Mathematics
MSU Denver
Advising professor in mathematical research.

Dr. Robert Green
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Algorithms Lead
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Direct boss at 908 Devices.