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# CODY GRIFFITH

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## Mathematical Research Scientist

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### Summary

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After a continuous 10+ years of study in mathematics, I now have the tools, experience, and programming knowledge to apply my skills to any field in need of analysis. As of now, I have built scientific instruments for national defense and chemical/biological identification, worked with students on their research projects in a variety of sciences, partnered with a social good initiative aiming to make actionable decisions with their community, and even gave counsel to a mining company hoping to reduce their machine breakdown overhead.

My personal goals are to continue broadening my skills and domain knowledge across the sciences. I do hope to complete a PhD in the near future all while partnering with an industry to give this work a meaning.

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### Education

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| 2016 - 2018 | M.Sc in Applied Mathematics<br><i>University of British Columbia</i>          |
| 2012 - 2016 | B.Sc in Applied Mathematics<br><i>Metropolitan State University of Denver</i> |

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### Work experience

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| December 2018 -<br>Current | Research Scientist<br><i>908 Devices</i><br>With 908, I had gained domain knowledge in both chemistry and biology while applying complex mathematical algorithms to process incoming data. Taking my application of mathematics to a whole new level, I began developing scientific instruments and building internal tools at an industrial level. All tools and applications I had built were written in python and I had launched my first consumer grade product within my first 6 months. This product performed the entirety of an intact protein analysis compatible with 908 hardware by the click of a button, summarized results in a means most suitable to our biology researcher customers. |
| May 2018 - October<br>2018 | Research Scientist<br><i>Data Science for Social Good (UBC)</i><br>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.

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## Projects

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- 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.

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## Skills

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- 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

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## Referees

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### Dr. Rachel Kuske

[Rachel@math.gatech.edu](mailto:Rachel@math.gatech.edu)

Chair of Mathematics  
Georgia Technical University

*Master's thesis supervisor.*

### Dr. Elizabeth Ribble

[emcclel3@msudenver.edu](mailto:emcclel3@msudenver.edu)

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  
908 Devices

*Direct boss at 908 Devices.*