

# Daniel Mckenzie

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## Summary of Qualifications

- Excellent quantitative and analytic skills, gained through several rigorous degrees in Math and Applied Math.
- Proficient in several programming languages, including Python, Matlab and L<sup>A</sup>T<sub>E</sub>X.
- Skilled in conducting research, both independently and collaboratively.
- Strong written and verbal communication skills, especially in presenting technical results to a non-technical audience, gained through presentations in Math departments and at an internship, and through tutoring and teaching.
- Experience in coordinating small teams, project management and workshop facilitation gained through various charitable tutoring and tutor-training endeavours.

## Education

- **University of Georgia** Athens, Georgia, United States  
*Ph.D (Mathematics)* 2013-present  
Currently focused on Machine Learning and Big Data techniques, particularly low rank matrix completion problems and analysis of large networks. Involves writing algorithms in Matlab and Python. Relevant coursework includes Signal Analysis, Probability, Real Analysis.
- **M.Sc (Mathematics)** Cape Town, South Africa  
2012-2014 *University of Cape Town*  
Thesis in Complex Algebraic Geometry. Received the degree with distinction and was nominated by the mathematics department for the South African Society for the Advancement of Science's annual medal for most outstanding Masters Thesis.
- **B.Sc(honours) Applied Maths** Cape Town, South Africa  
2007-2010 *University of Cape Town*  
Thesis on Convexity Conditions in the Calculus of Variations. Relevant coursework includes 4 courses on Partial Differential Equations and Mathematical Physics, 2 courses on Numerical Analysis using Matlab. 2 year of physics involving simulation projects written in Python. Graduated with a first-class pass and in the top 5% of my graduating class and was on the Dean's Merit list every year.
- **National Senior Certificate** East London, South Africa  
2003 - 2006 *Hudson Park High School*  
Obtained Senior Certificate with distinction and was the Dux scholar (Top academic student). Top student in the following subjects: English, Geography, Science, Mathematics and Additional Mathematics.

## Awards, Grants & Honours

NRF Doctoral Scholarship for Study Abroad (\$22,000 a year plus travel expenses)	2014 - 2016
DAAD short term research exchange to the University of Bayreuth	2013
DAAD-NRF joint masters bursary (R60,000 a year)	2012-2013
UCT Council Merit Scholarship (R10,000)	2010
NRF Honours Bursary (R15,000)	2010
Jakob Burlak Memorial Trust Scholarship (R2,500)	2009
Science Faculty Scholarship (approx. R10,000 off fees a year)	2007,2008,2009

## Relevant Work Experience

- Student Research Assistant in Computational Seismology** Stellenbosch, South Africa  
*June-July 2009*  
 Winter internship at ISS International (now the Institute of Mine Seismology). Worked on a novel algorithm for calculating s- and p- wave velocities through rock. Wrote a Python application implementing this algorithm (approx. 500 lines of code). Contact: Dr Richard Lynch (Business Development Manager): richard@issi.co.za
- Course Tutor** University of Cape Town  
*2009 - 2012*  
 Tutor for Calculus 1 through 3 (multi-variable calculus), Linear Algebra and Introduction to differential equations.
- Volunteer Training Coordinator** Cape Town, South Africa  
*February 2011, June 2011*  
 Part of a team that developed training material for new volunteers to tutor maths and science in an underprivileged area for SHAWCO, a large NGO affiliated with the University of Cape Town. Coordinated training workshops for approximately 600 volunteers and gave presentations on effective tutoring. Contact: Rachel Mazower (head of SHAWCO 2011): rachelmazower@gmail.com
- Co-Project Leader** Kensington, Cape Town, South Africa  
*2012*  
 Co-Project leader of a unit within SHAWCO, an educational NGO providing free tuition in Maths and Science in an underprivileged area of Cape Town. In charge of developing curricula for Maths and Science for the tenth and eleventh Grade, managing a team of 7 colleagues, liaising with the SHAWCO leadership and leading weekly tutorial sessions.
- Instructor of Record** University of Georgia  
*2013 - 2015*  
 Instructor of Record for precalculus and calculus classes at the University of Georgia. Responsible for preparing and delivering lectures and writing and grading tests. Head TA for an experimental online version of precalculus where I worked with a geographically distributed team to deliver synchronous and asynchronous content to students at several Georgian universities.

## Programming Languages and Specialized Software

Proficient in Python, Matlab and L<sup>A</sup>T<sub>E</sub>X. Basic working knowledge of HTML, SQL and Excel. Experienced with Webassign, Blackboard Collaborate and GitHub.