

Education

- **University of Georgia** Athens, Georgia, United States
Ph.D (Mathematics) 2013–present
 - Dissertation: Efficient algorithms for cluster extraction in graphs, using compressive sensing.
 - Advisor: Professor Ming-Jun Lai
- **University of Cape Town** Cape Town, South Africa
M.Sc (Mathematics) 2012–2014
 - Thesis: On Uniformization of Compact Kähler Manifolds with Negative First Chern Class by Bounded Symmetric Domains.
 - Included a three month long research exchange to the University of Bayreuth in Germany
 - Supervisors: Dr. K. Hughes and Dr. R. Martin
 - Degree awarded with distinction.
- **University of Cape Town** Cape Town, South Africa
B.Sc(hons) Applied Maths 2007–2010
 - Thesis: Convexity conditions in the direct methods in the calculus of variations
 - Supervisor: Dr F. Ebobisse
 - Obtained degree with distinction and distinctions in Mathematics and Applied Maths.
 - Dean’s Merit list every year

Awards, Grants & Honours

NRF Doctoral Scholarship for Study Abroad	2014–2016
DAAD short term research exchange to the University of Bayreuth	2013
DAAD-NRF joint masters bursary	2012
UCT Council Merit Scholarship	2010
NRF Honours Bursary	2010
Jakob Burlak Memorial Trust Scholarship	2009
Science Faculty Scholarship	2007,2008,2009

Talks and Presentations

- **International Conference on Mathematics of Data Science**, Norfolk VA, November 2018 (poster).
- **AMS Central sectional**, Ann Arbor MI, October 2018 (invited talk).
- **SIAM Conference on Discrete Mathematics**, Denver CO, June 2018 (contributed talk).
- **7th International Conference on Computational Harmonic Analysis**, Nashville TN, May 2018 (contributed talk).

- **Meeting on Applied Algebraic Geometry**, Atlanta GA, April 2018 (poster).
- **Georgia Scientific Computing Symposium**, Atlanta GA, February 2018 (poster).

Papers

- Semi-supervised cluster extraction via a compressive sensing approach, joint with Ming-Jun Lai (*submitted*, arXiv:1808.05780).
- On the neighborliness of dual flow polytopes of quivers, joint with Patricio Gallardo (*preprint*, arXiv:1811.01993).
- Dynamic cluster extraction using compressive sensing, *in preparation*.
- Shortest path distances and Semi-Supervised Learning, joint with Steven Damelin, *in preparation*.

Teaching Experience

- **MATH1113: Precalculus**
 - Instructor of Record for eight sections of precalculus, Fall 2014–Spring 2018, at UGA.
 - Responsible for delivering lectures, writing tests, grading and assigning final grades.
- **MATH2250: Calculus 1**
 - Instructor of Record for two sections of calculus 1, Spring 2015 and Spring 2017, at UGA.
 - Responsible for delivering lectures, writing tests, grading and assigning final grades.
- **MATH1113E: online precalculus**
 - Head TA for fully online version of UGA’s precalculus course, Fall, Spring and Summer 2015.
 - Worked with a team of instructors, software developers and undergraduate TA’s.
 - Responsible for monitoring online discussion boards and answering content related questions, supervising two undergraduate TA’s and running biweekly online discussion sessions.
 - Software used includes Webassign and Blackboard Collaborate
- **TA/ Course Tutor for:**
 - MAM1000 (Integral and Differential Calculus), MAM2000 (Linear Algebra, Multivariate Calculus), MAM1043 (Introduction to Applied Maths) at UCT, 2009–2012.
 - MATH2200 (Differential Calculus) at UGA, Spring 2014.

Mentoring and Outreach

- **UGA High School Math Camp**
Graduate Student Helper

University of Georgia
Summer 2018

- Guided a group of five high and middle school students through a week-long project on ‘Monster Epidemiology’.
- Discussed the intuition behind differential equations, introductory scientific programming, finding reliable sources and scientific communication.

- **Directed Reading Program** University of Georgia
Graduate Mentor Fall 2017
 - Supervised an undergraduate student in a semester-long reading course on ‘Random Matrices in Compressive Sensing’
- **SHAWCO** Cape Town, South Africa
Deputy project leader - KenSMART project 2012
 - Deputy project leader for a project 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.
 - Led tutorial sessions once a week.
- **SHAWCO** Cape Town, South Africa
Volunteer Training Coordinator February 2011, June 2011
 - Part of a team that developed training material for new volunteers at SHAWCO, a large NGO affiliated with the University of Cape Town
 - Coordinated training workshops and gave presentations on effective tutoring.

Industry Experience

- **The Wish Dish** Athens, GA
Data Scientist January–August 2016
 - Unpaid data scientist position at a local start-up developing an online story-sharing community.
 - Analyzed their database of stories and clustered them based on dominant themes, using standard Natural Language Processing techniques.
 - Implemented a proof-of-concept recommendation algorithm in Python, using Scikit-learn.
- **ISS International** Stellenbosch, South Africa
Student Research Assistant June–July 2009
 - Winter internship at a seismic technologies company
 - Worked on a novel algorithm for calculating s- and p- wave velocities through rock and developed an application in Python implementing this algorithm

Other Qualifications

- **deeplearning.ai** (via Coursera.org)
Deep Learning Specialization June – September, 2018
 - Five course specialization covering various network architectures and applications.

Other Relevant Skills

- **Markup Languages:** \LaTeX , HTML
- **Programming Languages:** MATLAB, Python & Sage.
- **Deep Learning Frameworks:** Tensorflow, Keras, MATLAB Deep Learning Toolbox.