

## Education

### California Institute of Technology, Pasadena, California, USA

*Doctor of Philosophy (Mathematics)*

*September 2015 - Present*

Thesis Topic: "Classification of Poisson maps" (algebraic geometry). Cumulative GPA: 3.9/4.0

### The University of Adelaide, Adelaide, Australia

*Master of Philosophy (Pure Mathematics)*

*February 2012 – May 2014*

High Distinction (highest degree level), Thesis: "Noncommutative Geometry Methods in Number Theory"

*Honours Bachelor of Mathematical Science*

*February – December 2011*

First Class Honours (highest degree level), Thesis: "Belyi's Theorem" (complex geometry)

*Bachelor of Mathematical & Computer Science, Bachelor of Engineering (Mechatronic)*

*2007 – 2010*

Major GPA: 7.0/7.0 with honours.

**Relevant Coursework:** Learning Systems, Number Theoretical Methods in Cryptography, Object Oriented Programming, Advanced PID Control, Advanced Digital Control, Robotics, Engineering Systems Design, Micro-controller Programming, Numerical Analysis and Probability and Statistics, Combinatorial Analysis, Discrete Mathematics, Multivariable Calculus.

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## Work Experience

### The University of Adelaide, Adelaide, Australia

*Undergraduate Engineering Researcher | Mechatronic Engineering Project*

*February 2010 – December 2010*

- Personally responsible for indoor (no GPS data) localization strategy. Involved adapting Kalman filter techniques on LIDAR and wheel encoding data. This had to seamlessly integrate with software written by nine other team members.
- \$200,000 funded entry in \$1.6 million Multi Autonomous Ground-robotic International Challenge organised by US Department of Defense research center TARDEC and Australian Department of Defence group DSTO.

### SA Power Networks, Adelaide, Australia

*Power Engineering Intern | Low Voltage Quality Assurance Team*

*December 2009 – February 2010*

- Jobs included solving technical electrical design issues, solution system design, and field construction evaluation.
- Worked in the Quality Assurance group in the Low Voltage Department. Provided technical solutions to electrical issues at civilian residences in a timely manner.

### Teacher:

- TA Fellow at California Institute of Technology: Leader of Math department TAs providing training and support, 2020-2021.
  - TA at California Institute of Technology: Calculus, Linear Algebra, Vector Calculus, Differential Equations, 2015-2021.
  - Live-in Lecturer at Australian Mathematical Olympiad Committee Selection School, 2007-2014, Volunteer teacher of extension mathematics at St Peter's College, 2006-2015, Teacher of extension mathematics at the Mathematical Association of South Australia Saturday morning workshops, 2006-2010, 2014.
  - TA at Adelaide University, 2011-2014, Private tutor, 2006-2016, Head Volleyball Coach, Adelaide University 2007-2014.
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## Selected Independent Upskilling

**Coursera:** Introduction to Data Science in Python; Applied Plotting, Charting & Data Representation in Python (Courses from the University of Michigan)

**Individual** regular coding practice: Leetcode, Codewars, primarily in Python.

**Terminal AI:** Largest global online coding competition. Finalist and 5<sup>th</sup> place in West Coast Tournament (Team AKO). <https://terminal.c1games.com>. Prize money won: \$1000.

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## About Me

**Professional Interests:** Mathematics, Data Science, Machine Learning, Algorithms, Software Engineering, Financial Modelling.

**Technologies:** Proficient in Python (Pandas, Numpy, Scikit-learn), LaTeX, Microsoft Office.

**Languages:** English (native), Polish (native), French (intermediate).

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## Academic Honours and Awards

### International Mathematics Olympiad

- Silver Medal, 47th International Mathematics Olympiad in Ljubljana, Slovenia 2006.
- Bronze Medal, 46th International Mathematics Olympiad in Mérida, Mexico, 2005.

• **Apostol Award for Excellence in Teaching** (best TA in Caltech Math Department), 2020.

• **ASCIT Teaching Award** (awarded to only 3 Caltech TAs by the entire undergraduate body), 2020.

• Postgraduate Awards/Scholarships: Australian Postgraduate Award, 2012-2013, Adelaide University ECMS Faculty 3 Minute Thesis Competition Winner, 2013, Rhodes Scholarship Finalist, 2013. **Total Value ~\$AU100,000.**

• Undergraduate Awards/Scholarships: Department of Further Education Science and Technology Adelaide Uni Scholarship, 2011, E.S. Barnes Prize, 2008, Certificate of Merit for Academic Excellence, 2007, 2008, Adelaide Undergraduate Scholarship, 2007, J.H. Michael Prize, 2007, Australian Power Industry Bursary, 2007. **Total Value: ~\$AU80,000.**