

Mission

“A lie can travel halfway around the world before the truth can get its boots on.” - Jonathan Swift

We live in an incredible age of communication, information and data. It has afforded us great benefits - but also immense dangers. The complex challenges, both technical and social, of our information age are only just beginning. Whatever problems the future has, I am excited to face them head on.

Education

- **Masters of Philosophy in Applied Mathematics and Data Science - The University of Adelaide** (2019-2020)
Research focuses on the flow of information across networks in social media and network structure complexity on a full scholarship.
 - **Valedictorian - Bachelor of Mathematical and Computer Sciences - The University of Adelaide** (2016 - 2018)
Active member of several societies and overloading to make the most of my time at University. Majoring in Statistics and Applied Mathematics.
-

Community & Volunteering

- **President of Adelaide University Mathematics Society**
(2018) Working with a team of passionate individuals to contribute to the community at the University of Adelaide. Formerly Vice-President, coordinating sales logistics and events management (2017).
 - **Treasurer of Women in STEM Society**
(2019) A society helping change the culture of a men and women in STEM to broaden inclusivity and fight negative ingrained cultural attitudes. Managing finances and acting an executive member.
 - **Leader in Design and Engineering Practical Team**
(2017) Project leader working with students to create products and develop new skills. Also worked as Treasurer (2019) and Social Equity Officer (2020).
 - **Outreach Officer for Robotics Club**
(2016) Working to interact with students, schools and University outreach department to organise events and help foster interest for the Adelaide University Robotics Club.
 - **Volunteer for Act For Kids, Science Alive and Rotaract**
(Various) Helping out as a casual events volunteer for a variety of events as part of ongoing involvement in communities.
-

Internships and Work Experience

- **NLP AI Specialist Consultant - Brainframe**
(2019-2020) My work specialises in building solutions with natural language processing (NLP) and large scale online data sources. Working with an amazing team of consultant AI experts to deliver custom machine learning driven products to a diverse base of clients.
- **Intern at Data To Decisions - Sentiment Model Development**
(2019) Worked on developing a machine learning sentiment model to predict emotions in text conversations for the SemEval 2019 International Workshop Task 4. Scored in the top %5 of finalists. Paper published containing model: “The Importance of Being Shallow”.
- **Summer Researcher - Data-Driven Network Analysis of Spotify Music**
(2018) Data collection and analysis of a large complex network of artists collaborations using Python. Categorisation models and network based predictive models for musical success developed. Developed for Australian Mathematical Sciences Institute Summer Research Scholarship. Work presented as W
- **Team Leader for Computer Vision Controlled Robotic Chessboard Project**
(2017) Coordinated an interdisciplinary team of students developing a mechanical, AI driven chessboard using computer vision processing and convolutional neural networks for machine learning classification problems. Developed in affiliation with the Australian Center for Robotic Vision.
- **Data Analysis from Twitter to analyze #selfie**
(2016) Python and twitter API's to access large data sets and perform statistical analysis and visualisation using R.

Personal Development

- Long Distance Running - Including Barossa Marathon. Plans to push harder and run further.
- Rotary Youth Leadership Development Camp (2016)
- Members Retreat - ARC Centre of Excellence for Mathematical & Statistical Frontiers
- Social Bookclub - Reading Books from across the literary spectrum

Other Professional Development

- **Submission to Select Committee on the Future of Work and Workers**
Testified to the committee on behalf of Australian Institute of Machine Learning (May 2018)
- **Summer School - UNSW Sydney - AMSI Funded**
Undertook “Mathematical Methods of Machine Learning” at UNSW. Living in college over summer and meeting other students from around Australia.
- **Australian Optimisation Competition Team (2017)**
Member of a team of students in a convex optimisation challenge using a variety of heuristics and linear programming.
- **Image Processing of Medical Images (2017)**
Processing of medical scans of eyes to fit curves to sections and extract values for analysis for a medical research project.
- **Winning team in quantum computing competition, QxBrach (2017)**
- **Accelerating machine learning with GPU technologies, Workshop - Nvidia (2018)**

Publications

- Network Analysis of the Spotify Artist Collaboration Graph
- Podlab at SemEval-2019 Task 3: The Importance of Being Shallow
- How the Avengers assemble: Ecological modelling of effective cast sizes for movies
- (In development) A flexible random graph model of echo-chambers and Australian political Twitter

Speaking Engagements

- 16th Workshop on Algorithms and Models for the Web Graph (2019)
- 4th Annual Australian Social Network Analysis Conference (2019)
- “The Mathematics of Deepfakes” - AUMS Lecture Series (2019)
- AMSIConnect (2017) - *Best Student Presentation*

Teaching

- **Temporary Lecturer - Foundation of Computer Science**
(2019) Filling in for lecturer while on extended break.
- **Lab Instructor - Mathematics for Data Science**
Teaching Python and data science skills to undergrads using fun problems and Jupyter Notebooks.
- **Masters Tutor - University of Adelaide (2018 - current)**
Communicating a range of computer science topics from beginner level to more advanced algorithms and data structures. Working mostly with international and mature age students.

References

Dr Lewis Mitchell,
Senior Lecturer in Applied Mathematics
✉ lewis.mitchell@adelaide.edu.au ☎ 08 8313 5424

Prof Matthew Roughan,
Professor in Applied Mathematics
✉ matthew.roughan@adelaide.edu.au ☎ 08 8313 6282

Jamie Heal,
Managing Director at Brainframe
✉ jamie.heal@mlvintelligence.com ☎ 0413 830 073

Luke Heffernan,
Project Manager at Brainframe
✉ luke.heffernan@mlvintelligence.com ☎ 0418 807 288