

# DENNIS LIU

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Australian, engineer, data scientist

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## Education

### The University of Adelaide

*Ph.D candidate: Mathematics (Statistics)*  
2017 to present

- Utilising Bayesian statistical learning,
- Proficiency in Python and standard quantitative packages (numpy, pandas, sklearn etc.),
- Developing novel models and construct appropriate learning algorithms to infer parameters,
- Applying object-orientated programming to improve interpretability. Click here for more.

## Awards & Achievements

Australian winner of the ActInSpace <sup>®</sup> challenge	2020
Invited speaker to WHO Pacific Region COVID-19 Science and Research Seminar	2020
ARC Centre of Excellence for Mathematical and Statistical Frontiers Public Lecture	2019
Data to Decisions CRC Big Data Scholarship	2017
Dean's Merit Certificate for Outstanding Academic Achievement	2009–2012
Max & Bette Mendelson Foundation Scholarship	2010

My research focuses on building frameworks to model social behaviour and infectious diseases using digital, non-traditional datasets. I am interested in analysing human behaviour and examining their effects on models and forecasts of public health measures.

<i>B. Ma. Comp. Sci (Applied)</i>	2011– 2015
<i>B. Eng. (Chemical) with First Class Honours</i>	2009– 2013

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## Publications & Conferences

<a href="#">Estimating temporal variation in transmission of SARS-CoV-2 and physical distancing behaviour in Australia.</a> <i>The Doherty Institute</i>	2020
<a href="#">How to flatten the curve of coronavirus, a mathematician explains.</a> <i>The Conversation</i>	2020
<a href="#">Elucidating user behaviours in a digital health surveillance system to correct prevalence estimates.</a> <i>Epidemics</i>	2020
Predicting influenza testing associated with family doctors by using a web-based surveillance system.	Acceptance pending
<a href="#">Complex Human Data Summer School</a>	2018

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## EMPLOYMENT EXPERIENCE

### Santos Ltd.

<i>Unit Controller Engineer</i>	2015 to 2017
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- Communicate issues with other stakeholders clearly and concisely
- Important commercial and safety decisions are regularly made independently, often employing critical problem solving skills to arrive to a solution

*Graduate Facilities Engineer*

2014 to 2015

As a facilities engineer, I was responsible for various facility assets producing oil and gas, optimising production. Projects were delivered in a timely and economic manner, with deliverables and risks communicated clearly to key stakeholders for approval.

- Optimisation of gas engines and compressors
- Project management
- Risk assessment

**Globe Education Centre**

*Mathematics and Science Tutor*

2009 to 2014

- Tutored students from the ages of 5 to 18 years of age in mathematics and science
- Supervised individuals and large classes

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KEY STRENGTHS

- Clear communication skills in time constrained environments,
- Project management,
- Collaborative working.

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REFEREES

**Lewis Mitchell**

Organisation: The University of Adelaide  
Position: Associate Professor  
Email: lewis.mitchell@adelaide.edu.au

**Glenn Lydyard**

Organisation: Santos Ltd.  
Position: Manager Operations Technology (Digital)  
Email: glenn.lydyard@santos.com

**Sungkook Kwon**

Organisation: Globe Education Centre  
Position: Director  
Email: skkwon@gecaustralia.com