Jackie Lok

Curriculum vitae — Last updated May 2022

Citizenship: Australian
Email: jackie.lok@gmail.com

Education

Princeton University, *Princeton, USA* — 2021–Present
PhD in Operations Research & Financial Engineering (ORFE)

University of New South Wales, *Sydney, Australia* — 2020
Bachelor of Science (Honours) in Pure Mathematics
with First Class Honours and The University Medal
Supervisor: Catherine Greenhill
Honours thesis: *Markov chains, mixing times, and cutoff*
WAM: 97.16/100

University of New South Wales, *Sydney, Australia* — 2016–2019
Bachelor of Actuarial Studies (Co-op) in Mathematics with Distinction
WAM: 95.65/100

Wharton School, University of Pennsylvania, *Philadelphia, USA* — 2017
Exchange Semester, GPA: 4.0/4.0

Research Interests

My research interests are broadly in probability and and its various connections with statistics, mathematical data science, machine learning, computer science, and combinatorics. In particular, I am interested in studying the behaviour of random discrete structures; these are fascinating mathematical objects which naturally arise in a range of areas, including the analysis of randomised algorithms and statistical models as well as the modelling of complex networks and systems. The aim of my research is to expand our theoretical understanding of these objects, which can then be applied to develop more efficient algorithms and tools that are accompanied by useful performance guarantees.

Awards & Scholarships

- The Richard Stillwell '21 *24 and Agnes Newhall Stillwell Fellowship (Princeton) — 2021–2022
- University Medal in Pure Mathematics (UNSW) — 2020
- The Faculty of Science Prize for Honours Year Science — 2020
- H.C. & M.E. Porter Memorial Scholarship — 2020
- The George Szekeres Prize — 2019
- The Head of School's Prize — 2019
- UNSW Co-op Scholarship in Actuarial Studies — 2016–2019
- UNSW Scientia Scholarship — 2016–2019
- Harry Manson International Exchange Scholarship — 2017
- UNSW Business School Dean's List – Stage 1 — 2016

Teaching Experience

University of Melbourne, *Melbourne, Australia*

- Academic Tutor, *School of Mathematics and Statistics*

  Responsible for the delivery of weekly tutorials and assessment marking.

  – MAST20004: Probability — Semester 1 2021

University of New South Wales, *Sydney, Australia*

- Academic Tutor, *School of Risk and Actuarial Studies*

  Responsible for the delivery of weekly tutorials, examination and assessment marking, development of course materials, student consultations, and providing general course support.

  – ACTL3162: General Insurance Techniques — Term 3 2020
  – ACTL2102: Foundations of Actuarial Models — Term 2 2020
  – ACTL2111: Financial Mathematics for Actuaries — Term 1 2020
  – ACTL1101: Introduction to Actuarial Studies — Term 3 2019
  – ACTL2102: Foundations of Actuarial Models — Term 2 2019
  – ACTL3141: Actuarial Models and Statistics — Term 1 2019

- Drop-in Centre Tutor, *School of Mathematics and Statistics* — 2020

  Provided students with additional assistance for a variety of first and second-year mathematics courses as part of the School of Mathematics and Statistics' student support scheme.

Work Experience

Actuarial Services Intern, icare, *Sydney, Australia* — Aug 2018–Feb 2019

– Supported the provision of actuarial advice and analysis for the NSW state insurer. Assisted with the reporting and valuation of outstanding claims liabilities, scenario analysis, preparation of financial budgets, claims experience monitoring, and the assessment of data quality and integrity.

Natural Perils Pricing Intern, Suncorp Group, *Sydney, Australia* — Feb 2018–Aug 2018

– Collaborated in the research and development of a new natural peril pricing model in Python using analytical and machine learning techniques with insurance and geospatial datasets. Developed interactive tool using SAS and Python to identify and visualise exposure concentration risks as part of an automated monitoring pipeline.

Capital and Valuation Intern, MetLife Australia, *Sydney, Australia* — Nov 2016–Feb 2017

– Assisted with financial reporting, reserving and scenario analysis for group life insurance.

Languages and skills

Languages

- English (native), Cantonese (fluent), Mandarin (beginner), German (beginner)

Computing

- Proficient with Python and R. Experience with a range of other programming languages and statistical software, including Java, MATLAB, SQL, and SAS.
- Competent with LaTeX.
- Experience with Microsoft Excel, Word, and PowerPoint.

Online courses

- Probabilistic Graphical Models Specialization (Coursera, Stanford University), 2021
- Deep Learning Specialization (Coursera, DeepLearning.AI), 2021
- Machine Learning (Coursera, Stanford University), 2018