Ming Qiu

+61 (415) 919-551 | mingq@student.unimelb.edu.au | website

EDUCATION

The University of Melbourne Melbourne, Australia

Doctor of Philosophy in Actuarial Studies Oct. 2019 – Present

- Research interests: Stochastic optimal control, systemic risk, deep learning methods for control problems.

University of California, Berkeley Berkeley, California

Master of Arts in Statistics Aug. 2017 – May 2018

- GPA: 3.90/4.00
- Relevant courses: Advanced Probability, Machine Learning, Linear Models,

University of Sydney Sydney, Australia

Bachelor of Science (Honours) in Mathematical Statistics Feb. 2013 - Nov. 2016

- First-class Honours: 92.0/100
- Relevant courses: Numerical Methods, Stochastic Processes, Option Pricing.

PUBLICATIONS

Published or Forthcoming in Referred Journals

- **Qiu M,** Jin Z, Li S (2022). Optimal risk sharing and dividend strategies under default contagion: A semi-analytical approach. Submitted to *Insurance: Mathematics and Economics*.
- **Qiu M,** Jin Z, Li S (2022). Optimal dividend strategies with reinsurance under contagious systemic risk. *SIAM Journal on Control and Optimization*, 60(3), 1269-1293.
- Jin Z, **Qiu M**, Tran K, Yin G (2022). A survey of numerical solutions for stochastic control problems: Some recent progress. *Numerical Algebra, Control and Optimization*, 12(2), 213-253.
- Wang N, Jin Z, Siu T, **Qiu M** (2021). Household consumption-investment-insurance decisions with uncertain income and market ambiguity, *Scandinavian Actuarial Journal*, 2021(10), 832-865.

RESEARCH EXPERIENCE

Research Assistant Aug. 2022 – Present

- Mentored by Prof. Hailiang Yang on optimal mixed control problems with reinforcement learning.

Ph.D. Researcher, University of Melbourne Oct. 2019 – Present

- Investigated mixed regular-singular control problems under contagious systemic risk analytically.
- Proposed and demonstrated numerical methods for mixed regular-singular control problems, including a hybrid deep learning Markov chain approximation method and a semi-analytical approach.

Honours Project, University of Sydney Mar. 2016 – Nov. 2016

Bounding Functions for Solutions to Elliptic and Parabolic Problems with Applications in Insurance Mathematics

- Constructed the elliptic and parabolic partial integro-differential equations solved by the infinite-time and finite-time ruin probabilities.
- Formulated the bounding functions for ruin probabilities and compared them with Monte Carlo approximations.

Talented Student Program, University of Sydney Aug. 2015 – Nov. 2015

Stochastic Processes and Numerical Methods

- Applied Feynman-Kac representations to find the corresponding Dirichlet problems. Solved them analytically and numerically by finite difference method and Monte Carlo approximations.

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TEACHING EXPERIENCE

The University of Melbourne Jul 2020 - Nov 2020, Jul 2021 - Nov 2021

Tutor of ACTL20004 Topics in Actuarial Studies

University of Sydney Feb 2016 - Jun 2016, Jul 2016 - Nov 2016

Tutor of MATH1001 Differential Calculus

Tutor of MATH1005 Statistics

EMPLOYMENT HISTORY

OneConnect Technology Shanghai, China

Data Mining Engineering Aug. 2018 – Oct.2019

- Designed data-driven recommendation systems based on supervised learning algorithms. Modeled customers' wealth and investment preferences by GBDT and targeted potential new customers of financial products and services.

SCHOLARSHIPS AND AWARDS

The Henry Buck Scholarship for 2019, University of Melbourne Nov 2019

For the student who has the highest overall scholarship score entering the Doctor of Philosophy for the year.

Australian Federation of Graduate Women Prize in 2016, AFGW, Apr 2017

For the female student who has the highest mark in first class Honours.

Veronica Thomas Prize for 2016, University of Sydney Apr 2017

For the best Statistics Honours seminar presentation.

The Honours Scholarships, University of Sydney Feb 2016

For the Honours students who demonstrate outstanding academic performances.

Deans' List of Excellence in Academic Performance, University of Sydney Jul 2014, 2015

For undergraduate students who demonstrate outstanding academic performances.

Dean of Science Undergraduate Exchange Scholarship, University of Sydney Nov 2014

For her exchange experience at University of California, Davis and outstanding academic performance (GPA: 4.00/4.00).

SKILLS

- Programming Languages: **Python**, **R, MATLAB, SQL**.
- Passed Financial Risk Management Exam Part I.
- Passed SOA Exams: P, FM, IFM, STAM, and SRM.