**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](https://epubs.siam.org/doi/abs/10.1137/21M1422318). *SIAM Journal on Control and Optimization*.­­­
* Jin Z, **Qiu M**, Tran K, Yin G (2022). [A survey of numerical solutions for stochastic control problems: Some recent progress](http://dx.doi.org/10.3934/naco.2022004). *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](https://doi.org/10.1080/03461238.2021.1886981), *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.

**TEACHING EXPERIENCE**

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

Tutor of ACTL20004Topics 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.