Liyuan LIN

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Education Experiences

- PhD Candidate, University of Waterloo (UW)
  Sep. 2020 - Jun. 2024
  - Major: Actuarial Science
  - Supervisor: Ruodu Wang and Alexander Schied
- Master degree in Economics, Central University of Finance and Economics (CUFE)
  Sep. 2017 - Jun. 2020
  - Major: Actuarial Science
  - Supervisor: Jingzhen Liu
- Bachelor in Economics, Central University of Finance and Economics
  Sep. 2013 - Jun. 2017
  - Major: Actuarial Science
  - Supervisor: Jingzhen Liu

Research Interests

- *Actuarial Science*
- *Dependence and Risk Aggregation*
- *Quantitative Risk Management*
- *Stochastic Control*

Manuscripts and Publications during Ph.D.

[1] **Lin, L.**, Wang, R., Zhang, R., and Zhao, C. (2024). The checkerboard copula and dependence concepts. *arXiv*:2404.15023.

[2] Lauzier, J., **Lin, L.** and Wang, R. (2024). Negatively dependent optimal risk sharing. *arXiv*:2401.03328.

[3] Koike, T., **Lin, L.** and Wang, R. (2024). Invariant correlation under marginal transforms. *arXiv*:2306.11188. (Invited revision by *Journal of Multivariate Analysis*)

[4] Lauzier, J., **Lin, L.** and Wang, R. (2024). Risk sharing, measuring variability, and distortion riskmetrics. *arXiv*:2302.04034. (Invited revision by *Mathematical Finance*)

[5] Han, X., **Lin, L.** and Wang, R. (2024). Diversification quotients: quantifying diversification via risk measures. *arXiv*: 2206.13679. (Accepted by *Management Science*)

[6] Koike, T., **Lin, L.** and Wang, R. (2024). Joint mixability and negative orthant dependence. *Mathematics of Operations Research*, doi.org/10.1287/moor.2022.0121

[7] Assa, H., **Lin, L.** and Wang, R. (2024). Calibrating distribution models from PELVE. *North American Actuarial Journal*, **28**(2), 373-406.

[8] Lauzier, J., **Lin, L.** and Wang, R. (2023). Pairwise counter-monotonicity. *Insurance: Mathematics and Economics*, **111**, 279–287.

[9] Han, X., **Lin, L.** and Wang, R. (2023). Diversification quotients based on VaR and ES. *Insurance: Mathematics and Economics*, **113**, 185–197.

[10] Chen, Y., **Lin, L.** and Wang, R. (2021). Risk aggregation under dependence uncertainty and an order constraint. *Insurance: Mathematics and Economics*, **102**, 169–187.

Manuscripts and Publications prior to Ph.D.

[1] **Lin, L.**, Liu, F., Liu, J. and Yu, L. (2024). The optimal reinsurance strategy with price-competition between two reinsurers. *arXiv*: 2305.00509. (Accepted by *Scandinavian Actuarial Journal*)

[2] Yu, L., **Lin, L**, Guan, G. and Liu, J. (2023). Time-consistent lifetime portfolio selection under smooth ambiguity. *Mathematical Control and Related Fields*, **13**(3), 967–987.

[3] Liu, J., **Lin, L.**, Yiu, K.F.C. and Wei, J. (2020). Non-exponential discounting portfolio management with habit formation. *Mathematical Control and Related Fields*, **10**(4), 761–783.

Conferences Organized

- 3rd Waterloo Student Conference in Statistics, Actuarial Science and Finance (Volunteer), 2022 (Waterloo, Canada)
- 2nd Waterloo Student Conference in Statistics, Actuarial Science and Finance (Volunteer), 2021 (Online)

Conferences

[1] 27th International Congress on Insurance: Mathematics and Economics, Chicago, United States, July 8-11, 2024.

[2] FADeRiS 2024, Ulm, Germany, May 27-29, 2024.

[3] BIRS: Optimal Transport and Distributional Robustness workshop, Banff, Canada, March 24-29, 2024.

[4] 26th International Congress on Insurance: Mathematics and Economics, Edinburgh, United Kingdom, July 4-7, 2023.

[5] SIAM Conference on Financial Mathematics and Engineering (FM23), Philadelphia, Pennsylvania, United States, June 6-9, 2023 (Invited).

[6] 2022 INFORMS Annual Meeting, Indianapolis, United States, October 16-9, 2022 (Invited).

[7] 3rd Waterloo Student Conference in Statistics, Actuarial Science and Finance, Waterloo, Canada, October 14-15, 2022.

[8] 57th Actuarial Research Conference, Urbana-Champaign, United States, August 3-6, 2022.

[9] 25th International Congress on Insurance: Mathematics and Economics, Online, July 12-15, 2022.

[10] 2022 CORS/INFORMS International Conference, Vancouver, Canada, June 5-8, 2022.

[11] SSC 2022 Annual Meeting, Online, May 30-June 3, 2022.

[12] 2nd Waterloo Student Conference in Statistics, Actuarial Science and Finance, Online, Nov 5-6, 2021.

[13] The 7th FINACT-IRAN National Conference on Financial and Actuarial Mathematics, Online, Aug 10-12, 2021.

[14] 23rd International Congress on Insurance: Mathematics and Economics, Munich, Germany, Jul 10-12, 2019.

[15] 2019 China Actuarial Theory and Application Conference, Shanghai, China, May 18-19, 2019.

[16] The 8th Annual Conference of Financial Engineering and Financial Risk Management Branch of OR Society of China, Xian, China, Aug 25-26, 2018.

Research Experience

- 2019.10.1-2020.6.17
  International visiting graduate student in Statistics and Actuarial Science in University of Waterloo.
- 2019.7.23-2019.9.15
  Researcher Assistant in the Department of Applied Mathematics in The Hong Kong Polytechnic University.
- 2018.7.23-2018.8.22
  Researcher Assistant in the Department of Applied Mathematics in The Hong Kong Polytechnic University.

Selected Scholarships & Awards

Graduate Research Excellence Award, UW	2024
Senate Graduate Scholarship Sprott Award, UW	2023
James C. Hickman Scholar Doctoral Stipend, Society of Actuaries (SOA)	2022-2023
ARC Graduate Student Presentation Award	2022
Statistics & Actuarial Science Chair's Award, UW	2021-2023
Actuarial Science Doctor Entrance Award, UW	2020
Excellent MA thesis, CUFE	2020
Outstanding Graduate, CUFE	2020
First-Class Scholarship, CUFE	2018-2019
Sir Edward Johnston prize, Institute and Faculty of Actuaries (IFOA)	2018

Teaching experience

- Instructor at UW

STAT 230 - Probability	Fall 2023

- Teaching Assistant at UW

ACTSC 231 - Mathematics of Finance	Spring 2024
STAT 202 - Introductory Statistics for Scientists	Winter 2024
ACTSC 221 - Introduction to Financial Mathematics	Winter 2024
STAT 333 - Stochastic Process 1	Spring 2023
ACTSC 232 - Life Contingencies 1	Winter 2023

CTSC 363 - Casualty and Health Insurance Mathematics 1	Fall 2022
STAT 230 - Probability	Spring 2022
ACTSC 446/846 - Mathematics of Financial Markets	Winter 2022, Fall 2022
ACTSC 331 - Life Contingencies 2	Winter 2022
ACTSC 431 - Casualty and Health Insurance Mathematics 2	Fall 2021
ACTSC 445 - Quantitative Enterprise Risk Management	Spring 2021, Fall 2021
ACTSC 371 - Introduction to Investment	Spring 2021, Winter 2023

- Teaching Assistant at CUFE
  - Mathematics for Life Contingency (Bilingual) - IFOA certification course

Peer-review Service

- Actuarial science journal(s): European Actuarial Journal, Insurance: Mathematics and Economics, ASTIN Bulletin
- Probability journal(s): Statistics and Probability Letters

Other Skills

- Language skills
  - Mandarin (Native)
  - English (Fluent, IELTS 7)
- Professional skills
  - SOA: Associateship
  - IFOA
    - Exam passed: CS1, CS2, CM1, CM2, CB1-CB3, CP1-CP3, Stage 1 Professionalism Course, Stage 2 Professionalism Course
    - Anticipating Associateship within one year of Personal and Professional Development.
  - China Association of Actuaries: Associateship
- Programming
  - Matlab, R, C++, Python, HTML, Excel VBA, MS Office