Xiyue Han

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Waterloo Scholar

Academic Appointments

- **Postdoctoral Fellow** — University of Waterloo
  Supervisors: Alexander Schied and Ruodu Wang — *October 2024 - September 2025*

Education

- **Ph.D. in Quantitative Finance and Actuarial Science** — University of Waterloo
  Supervisor: Alexander Schied — *May 2019 - August 2024*
- **MMath in Actuarial Science** — University of Waterloo
  Supervisor: Alexander Schied — *September 2017 - January 2019*
- **B.Sc. in Actuarial Science** — University of Hong Kong
  Advisor: Jae Kyung Woo — *September 2013 - May 2017*

Research Interests

Financial Mathematics and Applied Probability

Preprints

- **Han, X. & Schied, A.** Estimating the roughness exponent of stochastic volatility from discrete observations of the realized variance. *arXiv: 2307.02582*.
- **Han, X. & Schied, A.** On laws absolutely continuous with respect to fractional Brownian motion. *arXiv: 2306.11824*.
- **Han, X. & Schied, A.** Robust Faber–Schauder approximation based on discrete observations of an antiderivative. *arXiv: 2211.11907*.
- **Han, X. & Schied, A.** The roughness exponent and its model-free estimation. *arXiv: 2111.10301*.

Publications

- **Han, X. & Schied, A. (2022)** Step roots of Littlewood polynomials and the extrema of functions in the Takagi class. *Mathematical Proceedings of the Cambridge Philosophical Society, 173, 591-618.*
- **Han, X., Schied, A. & Zhang, Z. (2022)** A limit theorem for Bernoulli convolutions and the Φ-variation of functions in the Takagi class. *Journal of Theoretical Probability, 35, 2853–2878.*
- **Han, X., Schied, A. & Zhang, Z. (2022)** A probabilistic approach to the Φ-variation of classical fractal functions with critical roughness. *Statisitcs & Probability Letters, 168, 108920.*
- **Han, X. (2021)** A Gladyshev theorem for trifractional Brownian motion and n-th order fractional Brownian motion. *Electronic Communications in Probability, 26, 1-12.*

Professional Certification

Society of Actuaries — P, FM, LTAM, STAM, IFM, SRM, PA and VEE exams

voluntary Service

Co-chair of SAS Student Seminar Series — *2023*

Awards

Student Research Presentation Award, *Statistical Society of Canada* *2024*
Thesis Completion Award, *University of Waterloo* *2023*
James C. Hickman Scholar, *Society of Actuaries* *2022 - 2023*
Sprott Scholarship, *University of Waterloo* *2022*
Teaching Assistant Award, *University of Waterloo* *2022*
Senate Graduate Scholarship, *University of Waterloo* *2022*
International Doctoral Student Award, *University of Waterloo* *2019 - 2023*
Best Presentation Award in Waterloo Student Conference, *University of Waterloo* *2019*
International Master Student Award, *University of Waterloo* *2017 - 2018*
Statistics and Actuarial Science Chair Award, *University of Waterloo* *2017 - 2023*

Presentations

- **Estimating the roughness exponent of stochastic volatility** University of Michigan
  Financial Mathematics Seminar *February 2024*
- **The roughness exponent and its application in finance** Indiana University Indianapolis
  Departmental Seminar *February 2024*
- **Estimating the roughness exponent of stochastic volatility** New York University
  Departmental Seminar *January 2024*
- **Estimating the roughness exponent of stochastic volatility** Imperial College London
  Departmental Seminar *January 2024*
- **Estimating the roughness exponent of stochastic volatility** University of Waterloo
  The 4th Waterloo Student Conference in Statistics, Actuarial Science and Finance *October 2023*
- **The roughness exponent and its model-free estimation** University of Waterloo
  The 3rd Waterloo Student Conference in Statistics, Actuarial Science and Finance *October 2022*
- **The roughness exponent and its model-free estimation** Online
  AARMS CRG Conference on Computational Aspects in Finance and Actuarial Sciences *July 2022*
- **The roughness exponent and its model-free estimation** Online
  The 11th World Congress of the Bachelier Finance Society *June 2022*
- **The roughness exponent and its model-free estimation** Online
  The 56th Actuarial Research Conference *August 2021*
- **The roughness exponent and its model-free estimation** Online
  The 24th International Congress on Insurance: Mathematics and Economics *July 2021*
- **Extrema of functions in the Takagi class** University of Waterloo
  The 1st Waterloo Student Conference in Statistics, Actuarial Science and Finance *October 2020*

Experience as Instructor

ACTSC 432: Credibility and Risk Theory *Spring 2024*

Experience as Teaching Assistant

STAT 901: Theory of Probability I *Fall 2022*
ACTSC 363: Casualty and Health Insurance Mathematics I *Spring 2022*
ACTSC 446: Mathematics of Financial Markets *Winter 2021*
ACTSC 432: Credibility and Risk Theory *Spring 2021*
STAT 330: Mathematical Statistics *Fall 2020*
ACTSC 446: Mathematics of Financial Markets *Fall 2020*
ACTSC 432: Credibility and Risk Theory *Spring 2020*
ACTSC 431: Casualty and Health Insurance II *Spring 2020*
STAT 333: Applied Probability *Spring 2019*
STAT 330: Mathematical Statistics *Spring 2019*
STAT 221: Introductory Statistics *Winter 2018*
ACTSC 231: Introductory Financial Mathematics *Winter 2018*
STAT 221: Introductory Statistics *Fall 2017*
ACTSC 231: Introductory Financial Mathematics *Fall 2017*

This CV is current as of November 5, 2024.