# Xiyue Han

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xiyue-han.github.io

## Education

- **Ph.D. in Actuarial Science** — University of Waterloo
  *Supervisor: Prof. Alexander Schied* — *May 2019 - Spring 2024 (Expected)*
- **MMath in Actuarial Science** — University of Waterloo
  *Supervisor: Prof. Alexander Schied* — *September 2017 - January 2019*
- **B.Sc. in Actuarial Science** — University of Hong Kong
  *Second Major: Mathematics* — *September 2013 - May 2017*

## Research Interests

Rough volatility models, time series analysis, stochastic analysis and actuarial science.

## 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 $\Phi$-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 $\Phi$-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.*

## Awards

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|---|---|
| **James C. Hickman Scholar** | *2022 - 2023* |
| **Sprott Scholarship** | *2022* |
| **Teaching Assistant Award** | *2022* |
| **Senate Graduate Scholarship** | *2022* |
| **International Doctoral Student Award** | *2019 - 2023* |
| **Best Presentation Award in Waterloo Student Conference** | *2019* |
| **International Master Student Award** | *2017 - 2018* |
| **Statistics and Actuarial Science Chair Award** | *2017 - 2023* |

## Professional Cerification

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

## voluntary Service

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

## Presentations

- **Estimating the roughness exponent of stochastic volatility models** 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* *Augest 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 Teaching Assistant

**STAT 901**: Theory of Probability I *Fall 2022*
**ACTSC 363**: Casualty and Health Insurance Mathematics I *Spring 2022*
**ACTSC 846**: Mathematics of Financial Markets *Winter 2021*
**ACTSC 832**: Loss Model 2 *Spring 2021*
**STAT 330**: Mathematical Statistics *Fall 2020*
**ACTSC 846**: Mathematics of Financial Markets *Fall 2020*
**ACTSC 832**: Loss Model 2 *Spring 2020*
**ACTSC 831**: Loss Model 1 *Spring 2020*
**STAT 211**: Introductory Statistics *Winter 2020*
**MTHEL 131**: Introduction to Actuarial Practice *Winter 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 202**: Introductory Statistics for Scientists *Fall 2017*
**ACTSC 221**: Introductory Financial Mathematics (Non-Specialist Level) *Fall 2017*

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*This CV is current as of October 26, 2023.*