




# Xiyue Han

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## Education

- 2019 –  **Doctor of Philosophy in Actuarial Science**, University of Waterloo  
Supervisor: Prof. Alexander Schied
- 2017 – 2018  **Master of Mathematics in Actuarial Science**, University of Waterloo  
Supervisor: Prof. Alexander Schied  
Thesis: *On the Extrema of Functions in the Takagi Class*
- 2013 – 2017  **Bachelor of Science in Actuarial Science**, The University of Hong Kong

## Publications

- 1 **Han, X.**, & Schied, A. (2023a). A robust Faber–Schauder approximation based on discrete observations of an antiderivative. *arXiv preprint arXiv:2211.11907*.
- 2 **Han, X.**, & Schied, A. (2023b). Estimating the roughness exponent of stochastic volatility from discrete observations of the realized variance. *arXiv preprint arXiv:2307.02582*.
- 3 **Han, X.**, & Schied, A. (2023c). On laws absolutely continuous with respect to fractional brownian motion. *arXiv preprint arXiv:2306.11824*.
- 4 **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.
- 5 **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.
- 6 **Han, X.** (2021). A Gladyshev theorem for trifractional Brownian motion and n-th order fractional Brownian motion. *Electronic Communications in Probability*, 26, 1–12.
- 7 **Han, X.**, & Schied, A. (2021). The roughness exponent and its model-free estimation. *arXiv preprint arXiv: 2111.10301*.
- 8 **Han, X.**, Schied, A., & Zhang, Z. (2020). A probabilistic approach to the  $\Phi$ -variation of classical fractal functions with critical roughness. *Statistics & Probability Letters*, 108920.

## Awards







- 2022 – 2023  **James C. Hickman Scholar**, Society of Actuaries
- 2022  **Sportt Award for best PhD proposal**, University of Waterloo
- 2018 – 2022  **Statistics and Actuarial Science Chair Award**, University of Waterloo
- 2019  **Best Presentation Award in Waterloo Student Conference in Statistics, Actuarial Science and Finance**, University of Waterloo

## Professional Certification

Society of Actuaries











Exam P, FM, LTAM, STAM, IFM, SRM, PA and VEE exams

## Presentations

- October 2022     **The Hurst roughness estimator and its model-free estimation**, The 3rd Waterloo Student Conference in Statistics, Actuarial Science and Finance, University of Waterloo, Waterloo, Canada
- June 2022     **The Hurst roughness estimator and its model-free estimation**, The 11th World Congress of the Bachelier Finance Society, Online.
- August 2021     **The Hurst roughness estimator and its model-free estimation**, The 56th Actuarial Research Conference, Online.
- July 2021     **The Hurst roughness estimator and its model-free estimation**, The 24th International Congress on Insurance: Mathematics and Economics, Online.
- April 2021     **The Hurst roughness estimator and its model-free estimation**, Waterloo Student Seminar, University of Waterloo, Waterloo, Canada.
- October 2020     **Extrema of functions in the Takagi class**, The 1st Waterloo Student Conference in Statistics, Actuarial Science and Finance, University of Waterloo, Waterloo, Canada

## Teaching Experience

### Teaching Assistant at the University of Waterloo

- 2022W     **STAT 901** Theory of Probability 1, Instructor: Prof. Yi Shen
- 2022S     **ACTSC 363** Casualty and Health Insurance Mathematics 1, Instructor: Prof. Bin Li
- 2021W     **ACTSC 846** Mathematics of Financial Markets, Instructor: Prof. Ruodu Wang
- 2021S     **ACTSC 832** Loss Model 2, Instructor: Prof. Bin Li
- 2020F     **STAT 330** Mathematical Statistics, Instructor: Prof. Peijun Sang  
**ACTSC 846** Mathematics of Financial Markets, Instructor: Prof. Bin Li
- 2020S     **ACTSC 832** Loss Model 2, Instructor: Prof. Bin Li  
**ACTSC 831** Loss Model 1, Instructor: Prof. Bin Li
- 2020W     **STAT 211** Introductory Statistics and Sampling for Accounting, Instructor: Ms. Dina Dawoud  
**MTHEL 131** Introduction to Actuarial Practice, Instructor: Mr. Dave Kohler
- 2019F     **STAT 334** Probability Models for Business and Accounting, Instructor: Ms. Dina Dawoud  
**MTHEL 131** Introduction to Actuarial Practice, Instructor: Mr. Dave Kohler
- 2019S     **STAT 333** Applied Probability, Instructor: Prof. Pengfei Li  
**STAT 330** Mathematical Statistics, Instructor: Prof. Yi Shen
- 2018W     **STAT 211** Introductory Statistics and Sampling for Accounting, Instructor: Ms. Dina Dawoud  
**ACTSC 231** Introductory Financial Mathematics, Instructor: Mr. Keith Freeland

## Teaching Experience (continued)

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2017F          **STAT 202** Introductory Statistics for Scientists, Instructor: Ms. Dina Dawoud  
**ACTSC 221** Introductory Financial Mathematics (Non-Specialist Level), Instructor:  
Mr. Brent Matheson