Anthony Coache | CV

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anthony-coache • English and French

Degrees

2024 Ph.D., Statistics (3.95/4.00), University of Toronto
Thesis: Risk-Sensitive Reinforcement Learning With Dynamic Risk Measures.

2019 M.Sc., Statistics (4.30/4.30), Université du Québec à Montréal
Thesis: Stochastic Portfolio Optimization under Coherent Risk Measures.

2017 B.Sc., Mathematics & Statistics (4.18/4.30), Université du Québec à Montréal

Work Experience

2024–26 **Research Associate, Imperial College London**
Conducted research in mathematical finance, and supervised M.Sc. students

2022 **Visiting Researcher, Oxford-Man Institute, University of Oxford**
Worked on problems at the intersection of quantitative finance and machine learning. Invitation for a 6-month research visit from Prof. Álvaro Cartea

2020 **Research Assistant, Collaboration between Oanda and Fields-CQAM**
Investigated order-flow trading data and hedging with dynamic barriers

2019–24 **Ph.D. Candidate, University of Toronto**
Published novel results in risk management and reinforcement learning

2016–17 **Research Intern, Université du Québec à Montréal**
Interdisciplinary projects related to statistics, portfolio optimization, and epidemiology.

Publications

Published and Accepted Papers

- **Coache, A.**, Jaimungal, S. & Cartea, Á. (2023) Conditionally Elicitable Dynamic Risk Measures for Deep Reinforcement Learning. *SIAM J. Financial Mathematics*. DOI: 10.1137/22M1527209.
- **Coache, A.** & Jaimungal, S. (2023) Reinforcement Learning with Dynamic Convex Risk Measures. *Mathematical Finance*. DOI: 10.1111/mafi.12388.

Working Papers

- **Coache, A.** & Jaimungal, S. (2024) Robust Reinforcement Learning with Dynamic Distortion Risk Measures. *arXiv*. DOI: 10.48550/arXiv.2409.10096.
- Cheng, Z., **Coache, A.**, & Jaimungal, S. (2023) Eliciting Risk Aversion with Inverse Reinforcement Learning via Interactive Questioning. *arXiv*. DOI: 10.48550/arXiv.2308.08427.

In progress

- Capponi, A., **Coache, A.** & Muhle-Karbe, J. (TBD) Impact Dynamics in Automated Market Makers.

Selected Scholarships & Awards

2024–26	**NSERC** Postdoctoral Fellowship
2023–24	**Ontario** Graduate Scholarship
2023	**UofT DoSS** Doctoral Early Research Excellence Award
2023	**SIAG/FME** Conference Paper Prize
2022	**Oxford-Man Institute** Visitors Programme
2019–22	**NSERC** Alexander Graham Bell Doctoral's Award
2019–23	**FRQNT** Doctoral Scholarship
2017–18	**NSERC** Alexander Graham Bell Master's Award
2017–19	**FRQNT** Master's Award
2016–17	**NSERC** Undergraduate Student Research Awards + **FRQNT** Supplements

Invited Talks

Sep. 2024 *Mathematical Insights from Markets, Control and Learning*, Aussois, France.
Feb. 2024 *STATQAM Seminar*, Montréal, Canada.
June 2023 *SIAM Conference on Financial Mathematics and Engineering*, Philadelphia, USA.
June 2023 *SIAG/FME Conference Paper Prize Session*, Philadelphia, USA.
Oct. 2022 *INFORMS Annual Meeting*, Indianapolis, USA.
June 2022 *World Congress of the Bachelier Finance Society*, Online.
May 2022 *Oxford-Man Institute Workshop*, Oxford, United Kingdom.
June 2021 *SIAM Conference on Financial Mathematics and Engineering*, Online.

Selected Contributed Presentations

Sep. 2023 *Fields-CFI Recent Advances in Math. Finance & Insurance*, Toronto, Canada. [poster]
Apr. 2023 *UofT Statistics Graduate Student Research Day*, Toronto, Canada.
Aug. 2021 *UofT ACTSCI / MAFI Research Retreat*, Prince Edward County, Canada.
Mar. 2021 *UofT Research Topics in Statistical Machine Learning*, Toronto, Canada.
May 2019 *Annual Meeting of the SSC*, Calgary, Canada.
Sep. 2018 *McGill (Bio)Stats Research Day*, Montréal, Canada. [poster with O. Binette]
June 2018 *Annual Meeting of the SSC*, Montréal, Canada. [poster with F. Larose]

Selected Teaching Experience

Imperial College London
2024 *Instructor/Lecturer: Convex Optimisation*
2024 *Instructor/Lecturer: Quantitative Risk Management*

University of Toronto
2023 *Instructor/Lecturer: Stochastic Methods for Actuarial Science*
2023–24 *Teaching assistant: Stochastic Processes*
2023–24 *Teaching assistant: Data Analytics in Practice*
2021–23 *Teaching assistant: Data Science for Risk Modeling*
2021–22 *Teaching assistant: Matlab & Python bootcamps for MFI program*
2020 *Teaching assistant: Statistical Consultation, Communication and Collaboration*

Université du Québec à Montréal
2019 *Teaching assistant: ANOVA for Biology*
2018–19 *Teaching assistant: Regression*
2017–18 *Teaching assistant: Statistical Software Laboratory*
2016–18 *Teaching assistant: Statistical Methods for School of Management*

Academic Community Involvement

Journal Referee
Quantitative Finance; IMA J. Mathematical Control and Information

Conference Organizing Committee
2021–24 *ACM International Conference on AI in Finance (program committee)*
2020–21 *Canadian Statistics Student Conference (translation, session chair, moderator)*
2019 *First Edition of the Statistics Student Summit in Montréal (co-chair)*

Misc

Research Interests: RL; risk measures; stochastic modeling; statistical learning; optimization.
Programming: Strong knowledge of R, Python, Matlab, TeX. Knowledge of C/C++, SAS, Java, SQL.
Strengths: Multitasking, versatility, particular ease in creative work and fast learning.

Last updated on September 17, 2024. Full academic CV available upon request.