Anthony Coache | CV

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anthony-coache

Degrees

2019–24 **University of Toronto**
Ph.D., Statistics (3.95/4.00), advised by Prof. Sebastian Jaimungal
Thesis: Risk-Sensitive Reinforcement Learning With Dynamic Risk Measures.

2017–19 **Université du Québec à Montréal**
M.Sc., Statistics (4.30/4.30), advised by Profs. François Watier & René Ferland
Thesis: Stochastic Portfolio Optimization under Coherent Risk Measures.

2014–17 *B.Sc. with Honours, Mathematics concentration Statistics (4.18/4.30)*

Work Experience

2024–26 **Research Associate at Imperial College London**
Conducted research in the Mathematical Finance Section, supervised M.Sc. students, and taught master's level courses

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. Teaching assistant for various statistics courses

2016–17 **Research Intern, Université du Québec à Montréal**
Interdisciplinary projects related to statistics, portfolio optimization, sensitivity analysis, and epidemiology. NSERC USRAs with Profs. François Watier, Sorana Froda, René Ferland

Publications

Papers

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

In progress

- **Coache, A.** & Jaimungal, S. (TBD) Robust Reinforcement Learning with Dynamic Distortion Risk Measures.

Posters

- **Coache, A.** (2023) Robust Reinforcement Learning with Dynamic Risk Measures. *Fields-CFI Conference on Recent Advances in Mathematical Finance and Insurance*.
- Binette, O. & **Coache, A.** (2018) The Significance of the Adjusted R Squared. *(Bio)Stats Research Day*.
- **Coache, A.** & Larose, F. (2018) "Do schools kill creativity?" Well, they help analyze popularity! *Annual Meeting of the SSC*.
- Ferland, R., Froda, S. & **Coache, A.** (2017) Comparison of surveillance flu data across regions. *Annual Meeting of the SSC*.

Selected Talks

Invited

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

Contributed

- *Graduate Student Research Day.* (Apr. 2023) Toronto, Canada.
- *Research Topics in Statistical Machine Learning.* (March 2021) Toronto, Canada.
- *Annual Meeting of the SSC.* (May 2019) Calgary, Canada.
- *UQAM Prob/Stats Student Seminar.* (July 2017) Montréal, Canada.

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 Research Awards + **FRQNT** Supplements

Selected Teaching Experience

	Course Instructor
2023	*ACT460*† *Stochastic Methods for Actuarial Science*
	Teaching Assistant
2023–24	*STA447*† *Stochastic Processes*
2023–24	*STA2546*† *Data Analytics in Practice*
2021–23	*STA2536*† *Data Science for Risk Modeling*
2021–22	*STA2550*† *Matlab & Python bootcamps for MFI program*
2021	*STA4528*† *Dependence Modelling*
2020	*STA490*† *Statistical Consultation, Communication and Collaboration*
2018–19	*STT2120** *Regression*
2017–18	*STT2100** *Statistical Software Laboratory*

‡ Imperial College London   † University of Toronto   * Université du Québec à Montréal

Misc

Research Interests: Reinforcement Learning, Risk Sensitivity, Stochastic Modeling, Statistical Learning, Risk Measures, Optimization, Applied Statistics.

Programming: Strong knowledge of R, Python, Matlab, TeX. Knowledge of C/C++, SAS, Java, SQL.

Journal Referee: Quantitative Finance, IMA J. Mathematical Control and Information, ICAIF 21–24.

Conference Organizing Committee: ML and Quantitative Finance Workshop (2022), Canadian Statistics Student Conference (2020 & 2021), Statistics Student Summit in Montréal (2019).

Languages: English and French.

Strengths: Multitasking, versatility, particular ease in creative work and fast learning.

Full academic CV available upon request.