Steven A. Campbell

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Academic Employment

2023 – **Assistant Professor (Limited Term)** Columbia University

Education

2019 – 2023 **Ph.D. Statistics**, University of Toronto
Thesis title: *Optimization Problems in Model-Free Stochastic Portfolio Theory and Sequential Testing Games*
Advisors: Profs. Ting-Kam Leonard Wong and Yuchong Zhang

2018 – 2019 **M.A. Applied Mathematics**, York University

2017 – 2018 **B.A. Applied Mathematics**, York University

2013 – 2017 **B.B.A. Finance**, York University

Academic Awards and Honours

2023 **SGS Conference Grant**, University of Toronto ($1240 CAD)
DoSS Conference Travel Award, University of Toronto ($500 CAD)

2022 **Ontario Graduate Scholarship - Doctoral**, Government of Ontario ($15,000 CAD)
Doctoral Early Research Excellence Award, University of Toronto ($1,500 CAD)

2019 **Alexander Graham Bell Canada Graduate Scholarship (CGS D)**, NSERC ($105,000 CAD)

2018 **Alexander Graham Bell Canada Graduate Scholarship (CGS M)**, NSERC ($17,500 CAD)
York University Graduate Scholarship, York University ($4,000 CAD)
Dr. James Wu Prize for Best Honours Thesis, York University ($500 CAD)

2017 **Toronto Dominion Bank Award**, York University ($3,000 CAD)

2016 **The Olympia and Spyros Thomas Scholarship**, York University ($1,200 CAD)

2015 **The Dagonas Family Scholarship**, York University ($1,200 CAD)

2013 **President's Scholarship**, York University ($21,600 CAD)
Awards of Distinction Merit Scholarship, York University ($2,000 CAD)
Governor General's Academic Medal (Bronze), Government of Canada

Publications and Preprints

Academic Articles

1. **S. Campbell**, G. Gaitsgori, R. Groenewald, and I. Karatzas, "Parametric continuity in problems of optimal stopping," *In preparation*, 2024.
2. **S. Campbell** and M. Nutz, "Optimal Execution among N Traders with Transient Price Impact," *Preprint*, 2024.
3. **S. Campbell**, Q. Song, and T.-K. L. Wong, "Macroscopic properties of equity markets: stylized facts and portfolio performance," *arXiv preprint arXiv:2409.10859*, 2024.
4. **S. Campbell** and T.-K. L. Wong, "Efficient convex PCA with applications to Wasserstein GPCA and ranked data," *Journal of Computational and Graphical Statistics*, 2024.

5. **S. Campbell** and Y. Zhang, "A Mean Field Game of Sequential Testing," *arXiv preprint arXiv:2403.18297*, 2024.
6. **S. Campbell** and Y. Zhang, "Soft Classification Sequential Testing Problems," *Preprint*, 2024.
7. **S. Campbell** and T.-K. L. Wong, "Functional portfolio optimization in stochastic portfolio theory," *SIAM Journal on Financial Mathematics*, vol. 13, no. 2, pp. 576–618, 2022.
8. **S. Campbell** and E. J. Janse van Rensburg, "Lattice star and acyclic branched polymer vertex exponents in 3d," *Journal of Physics A: Mathematical and Theoretical*, vol. 55, no. 1, p. 015 002, 2021.
9. **S. Campbell** and E. J. Janse van Rensburg, "Numerical estimates of square lattice star vertex exponents," *Phys. Rev. E*, vol. 103, p. 052 137, 5 May 2021. DOI: `10.1103/PhysRevE.103.052137`.
10. **S. Campbell**, Y. Chen, A. Shrivats, and S. Jaimungal, "Deep Learning for Principal-Agent Mean Field Games," *arXiv preprint arXiv:2110.01127*, 2021.
11. **S. Campbell** and E. J. Janse van Rensburg, "Parallel PERM," *Journal of Physics A: Mathematical and Theoretical*, vol. 53, no. 26, p. 265 005, 2020.

Other Publications

1. **S. Campbell**, "Optimization Problems in Model-Free Stochastic Portfolio Theory and Sequential Testing Games," Ph.D. dissertation, University of Toronto, 2023.
2. **S. Campbell** and K. Whitehead, *Toys 'R' Us Canada: Is Playtime Over?* Ivey Publishing, 2018.
3. K. Whitehead and **S. Campbell**, *Hudson's Bay Company: Restructuring in a Retail Decline*, Ivey Publishing, 2018.

Invited Presentations

2024	INFORMS Annual Meeting, Seattle, Washington.
	8th Eastern Conference on Mathematical Finance, Fields Institute, Toronto, ON.
	Finance and Stochastics Seminar, Imperial College London, London, UK.
	Optimal Stopping Seminar, Columbia University, New York, NY.
2023	Mathematical Finance Seminar, Columbia University, New York, NY.
	SIAM Conference on Financial Mathematics and Engineering, Philadelphia, PA.
	Probability and Mathematical Finance Seminar, Carnegie Mellon University, Pittsburgh, PA.
	Financial and Actuarial Mathematics Seminar, University of Michigan, Ann Arbor, MI.
2022	SIAM Annual Meeting, Pittsburgh, PA.
	Statistics Graduate Student Research Day, University of Toronto, Toronto, ON.
2021	CMS 75th+1 Anniversary Summer Meeting, Canadian Mathematical Society, Virtual.
	Statistics Graduate Student Research Day, Fields Institute, Toronto, ON.
	ACTSCI/MAFI Research Meeting, University of Toronto, Toronto, ON.

Contributed Posters and Presentations

2024	12th World Congress, Bachelier Finance Society, Rio de Janeiro, Brazil.
2023	64th World Statistics Congress, International Statistical Institute, Ottawa, ON.
2022	6th Eastern Conference on Mathematical Finance, Rutgers University, New Brunswick, NJ.

Teaching

- 2024 — Stochastic Processes and Applications (GU4264/GR5264), *Columbia University*.
- Stochastic Methods in Finance (GU4265/GR5265), *Columbia University*.
- 2023 — Linear Regression Models (GU4205), *Columbia University*.
- 2021 – 2023 — MFI Annual Statistics Bootcamp, *University of Toronto*.
- 2021 — Fixed Income Fundamentals (FINE 3810), *York University*.

Other Academic Experience

Journal Referee

- Mathematical Finance, SIAM Journal on Financial Mathematics, Finance and Stochastics, Annals of Operations Research, Asian Journal of Control.

Student Supervision

- 2024 — Orange Ao (Undergraduate Summer Research Project), *Columbia University*.
- Luca Terzariol (Undergraduate Research Intern), *Columbia University*.
- Ivan Wong (Undergraduate Directed Reading), *Columbia University*.
- 2022 — Michael Shen (Graduate Research Assistant), *University of Toronto*.
- John Song (Undergraduate Summer Research Project), *University of Toronto*.

Co-organizer

- 2023 – — Mathematical Finance Seminar, Columbia University.

University Service

- MA Admission Committee, Columbia University.

Code Packages and Repositories

- Functional Portfolio Optimization: `https://github.com/stevenacampbell/FunctionalPortfolioOptimization`
- Convex PCA and Wasserstein Geodesic PCA: `https://github.com/stevenacampbell/ConvexPCA`
- Macroscopic Properties of Equity Markets and a Portfolio Backtesting Engine: `https://github.com/stevenacampbell/Macroscopic-Properties-of-Equity-Markets`

Skills

- Languages — English (native), Greek (limited working proficiency), French (elementary proficiency).
- Coding — Python, R, C/C++, MATLAB, Maple, LaTeX, VBA.

Last Updated

November 15, 2024