Ryan Campbell

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Research Interests

Multivariate extreme value theory and its applications, dependence modeling, stochastic processes, estimation of quantiles.

Education

2021–2025 PhD Statistics, Lancaster University
Thesis: Statistical Exploits of New Insights for Multivariate Extremes
Supervisor: Jennifer L. Wadsworth

2019–2020 MSc Mathematics & Statistics, McGill University
Thesis: Deterministic Gaussian Averaged Neural Networks
Supervisor: Adam Oberman

2015–2018 BSc Mathematics, McGill University

Publications

Preprints

[1] L.M. André, **R. Campbell**, E. D'Arcy, A. Farrell, D. Healy, L. Kakampakou, C. Murphy, C.J.R. Murphy-Barltrop, M. Speers. Extreme value methods for estimating rare events in Utopia, 2023. URL https://arxiv.org/abs/2312.09825

[2] I. Papastathopoulos, L. de Monte, **R. Campbell**, H. Rue. Statistical inference for radially-stable generalized Pareto distributions and return level-sets in geometric extremes, 2023. URL https://arxiv.org/abs/2310.06130

[3] J. L. Wadsworth and **R. Campbell**. Statistical inference for multivariate extremes via a geometric approach, 2022. URL https://arxiv.org/abs/2208.14951

[4] **R. Campbell**, C. Finlay, and A. M. Oberman. Adversarial Boot Camp: label free certified robustness in one epoch, 2020. URL https://arxiv.org/abs/2010.02508

[5] **R. Campbell**, C. Finlay, and A. M. Oberman. Deterministic Gaussian averaged neural networks, 2020. URL https://arxiv.org/abs/2006.06061

Presentations

Oct. 2023	HEC Statistics Seminar Title: Statistical inference for multivariate extremes via a geometric approach Location: HEC Montréal, Montréal, QC, Canada
Sept. 2023	STOR-i Extremes Workshop (STEW) Title: Modelling extremal dependence of a 3-dimensional oceanographic dataset via a semi-parametric geometric approach Location: Lancaster University, Lancaster, UK
June 2023	13th International Conference on Extreme Value Analysis Title: A geometric approach for modelling negative asymptotic dependence Location: Bocconi University, Milan, Italy

Teaching Assistantships

Lancaster University

Winter 2024	MATH333	Statistical Models (GLMs)
Winter 2024	MATH113	Convergence and Continuity
Winter 2023	MATH140	Statistics
Winter 2022	MATH456/556	Extreme Value Theory
Winter 2022	MATH235	Statistics II
Fall 2021	MATH330	Likelihood Inference

McGill University

Fall 2020	MATH208	Intro. to Statistical Computing
Fall 2019	MATH597	Topics in Applied Mathematics: Mathematics of Machine Learning
Fall 2019	MATH223	Linear Algebra

Research & Professional Activities

- **Data Science Intern**
  Desjardins General Insurance Group. Lévis, Québec.
  June–December 2020 (part-time), January–June 2021 (full-time)
- **Undergraduate Summer Research**
  Department of Mathematics & Statistics, McGill University.
  Project: Semiparametric modeling of max-stable processing using Kendall's tau rank correlation coefficient.
  Supervisor: Johanna Nešlehová
  May–September 2018

Honours, Awards, and Funding

2023–2027	FRQNT Doctoral Research Scholarship	CA$25,334
2023–2026	NSERC Postgraduate Scholarship-Doctoral	CA$63,000
2023	Nick Smith Prize	£500
2021–2025	EPSRC Mathematical Sciences studentship	£62,436 (minimum)
2020	Mitacs internship at Desjardins	CA$13,000
2019–2020	Master's degree funding	CA$20,500
2019–2020	McGill University Graduate Excellence Award	CA$3,400
2018	Science Undergraduate Research Award	CA$6,500

Languages & Skills

- Fluent in English and French.
- Proficient in R, Python (incl. PyTorch), Matlab, LaTeX, Java, HTML, Linux

Extracurricular Activities

- **Treasurer**, Lancaster University Folk Society
  Lancaster University
  2023–2024 academic year.
- **VP Finance**, Graduate Student Association for Mathematics and Statistics (GSAMS)
  McGill University
  2019–2020 academic year.
- **Volunteer at the 2018 Statistical Society of Canada annual meeting**
  Roles: Setting up audio-visual equipment for presentations and directing conference attendees to presentations.
  Location: McGill University
  3–6 June 2018