

Ryan Campbell

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Research Interests

- Statistics: multivariate extreme value theory, spatiotemporal modeling, stochastic processes, computational methods.
- Machine Learning: computer vision, adversarial robustness, high-dimensional numerical PDEs.

Education

- 2021– PhD, Statistics. Lancaster University.
 Thesis: Statistical Exploits of New Insights for Multivariate Extremes
 Supervisor: Jennifer L. Wadsworth
- 2019–2020 M.Sc., Mathematics & Statistics. McGill University.
 Thesis: Deterministic Gaussian Averaged Neural Networks
 Supervisor: Adam Oberman
 Cumulative GPA: 4.0 (4.0 scale)
- 2015–2018 B.Sc., Mathematics. McGill University.
 Cumulative GPA: 3.82 (4.0 scale)

Research & Professional Activities

- **Internship at Desjardins General Insurance Group**
Project Description: Using mathematical, statistical, and machine learning concepts for robust house insurance modeling.
June–December 2020 (part-time), January–June 2021 (full-time)
- **Ninth Annual Industrial Problem Solving Workshop**
Centre for Mathematical Research, University of Montreal
Project Description: Using machine learning tools to automatically identify patterns and novel behaviours in the radio-frequency environment at the Dominion Radio Astrophysical Observatory (DRAO)
Supervisor: Chris Budd (University of Bath), Seth Siegel (McGill University)
19–23 August 2019

- **Undergraduate Summer Research**

Department of Mathematics & Statistics, McGill University

Project Description: Semiparametric modeling of max-stable processing using the Kendall's tau rank correlation coefficient.

Supervisor: Johanna Nešlehová

May–September 2018

- **Mathematics Tutor**

Private tutor for a Secondary 4 mathematics student.

2016-2017 academic year

- **Manager, Lifeguard, Swimming Lessons Instructor, Diving Coach**

Western Lachine Recreation Centre

Summers 2010–2017

Papers

Google Scholar: <https://scholar.google.com/citations?hl=en&user=xI10ohkAAAAJ>

Preprints

- [1] **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>
- [2] **R. Campbell**, C. Finlay, and A. M. Oberman. Deterministic Gaussian averaged neural networks, 2020. URL <https://arxiv.org/abs/2006.06061>

Teaching Assistant

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

Languages & Skills

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

Honours, Awards, and Funding

2020	Mitacs internship at Desjardins (CAD \$13,000)
2019–2020	Master’s degree funding (CAD \$20,500)
2019–2020	McGill University Graduate Excellence Award (CAD \$3,400)
2018	Dr. Kenneth Davis Science Undergraduate Research Award (CAD \$6,500)

Extracurricular Activities

- **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