

# Michaël Lalancette, Ph.D.

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## Education

**Ph.D. in Statistics** | University of Toronto 09/2017 – 09/2022

- GPA: 4.0/4.0
- Thesis: [Statistical inference for tail dependence structures](#)
- Supervisor: Prof. Stanislav Volgushev

**M.Sc. in Statistics** | Université de Montréal 09/2015 – 08/2017

- GPA: 4.275/4.3
- Thesis: [Convergence d'un algorithme de type Metropolis pour une distribution cible bimodale](#)
- Supervisor: Prof. Mylène Bédard

**B.Sc. in Mathematics** | Université de Montréal 09/2012 – 05/2015

- GPA: 3.69/4.3 (Award of academic excellence)

## Publications

### Published

**Lalancette, M. (2023)**. On pairwise multivariate Pareto models. *Stat* 12(1).

**Lalancette, M., Engelke, S. and Volgushev, S. (2021)**. Rank-based estimation under asymptotic dependence and independence, with applications to spatial extremes. *The Annals of Statistics* 49(5), 2552–2576.

### Preprint

**Engelke, S., Lalancette, M. and Volgushev, S. (2022)**. Learning extremal graphical structures in high dimensions. ([arXiv:2111.00840](https://arxiv.org/abs/2111.00840))

**Lalancette, M. and Zimmerman, R. (2022)**. A new family of smooth copulas with arbitrarily irregular densities. ([arXiv:2204.04336](https://arxiv.org/abs/2204.04336))

### In preparation

With **D. Berger, G. Lefebvre, M.R. Keezer and M.-P. Sylvestre**. BoGlasso: Graphical lasso estimation through the bootstrap.

With **A. Bücher, J. Segers and S. Volgushev**. The empirical copula process on classes of non-rectangular sets.

With **S. Engelke and S. Volgushev**. Asymptotic analysis of the empirical extremal variogram.

With **A. Ryabchenko and S. Volgushev**. Adaptive learning of Hüsler–Reiss graphical models.

## Talks and presentations

### Invited conference talks

SSC 2024 | Memorial University, St. Johns, Canada

06/2024

Tentative title: On pairwise multivariate Pareto models

**Extreme Value Analysis 2023 | Bocconi University, Italy** 06/2023  
Title: Adaptive learning of Hüsler–Reiss graphical models

**CMStatistics 2022 | King’s College London, UK** 12/2022  
Title: Learning extremal graphical structures in high dimensions

**ETH-UCPG-TUM Workshop | Raitenhaslach, Germany** 10/2022  
Title: Learning extremal graphical structures in high dimensions

**JSM 2022 | Washington, USA** 08/2022  
Title: Learning extremal graphical structures in high dimensions

**IMS 2022 | London, UK** 06/2022  
Title: Learning extremal graphical structures in high dimensions

**Extreme Value Analysis 2021 | University of Edinburgh, UK** 07/2021  
Title: Concentration and asymptotic normality of the empirical variogram, with application to structure learning

**SAMARI 2021 | Université de Montréal, Canada** 03/2021  
Title: La théorie des valeurs extrêmes

### Contributed conference talks

**Journées de Statistique de la SFdS | Brussels, Belgium** 07/2023  
Title: Le processus empirique de copule sur des ensembles non rectangulaires

**German Probability and Statistics Days 2023 | Essen, Germany** 03/2023  
Title: The empirical copula process on classes of non-rectangular sets

**SSC 2022 | Online** 06/2022  
Title: Learning extremal graphical structures in high dimensions

**SSC 2021 | Online** 06/2021  
Title: Rank-based estimation under asymptotic dependence and independence, with applications to spatial extremes

**SGS Research Day 2021 | Fields Institute, Canada** 04/2021  
Title: Rank-based estimation under asymptotic dependence and independence, with applications to spatial extremes

**Extreme Value Analysis 2019 | University of Zagreb, Croatia** 07/2019  
Title: Rank-based M-estimation for tail dependence and independence

**SGS Research Day 2019 | Fields Institute, Canada** 04/2019  
Title: Rank-based M-estimation for tail dependence and independence (poster presentation)

**SSC 2018 | McGill University, Canada** 06/2018  
Title: Convergence of a random walk Metropolis algorithm for bimodal target distribution

### Invited departmental seminars

**Ruhr-Universität Bochum, Germany** 04/2023  
Title: Learning extremal graphical structures in high dimensions

**Université du Québec à Montréal, Canada** 03/2023  
Title: Apprentissage de modèles graphiques extrémaux en grande dimension

<b>Université de Montréal, Canada</b> Title: Apprentissage de modèles graphiques extrémaux en grande dimension	<b>03/2023</b>
<b>University of Geneva, Switzerland</b> Title: Learning extremal graphical structures in high dimensions	<b>11/2022</b>
<b>Technical University of Munich, Germany</b> Title: Estimation of bivariate and spatial tail models under asymptotic dependence and independence	<b>09/2022</b>
<b>Technical University of Munich, Germany</b> Title: The extremal graphical lasso	<b>11/2021</b>
<b>Université Catholique de Louvain, Belgium</b> Title: The extremal graphical lasso	<b>10/2021</b>

## Scholarships and awards

<b>Postdoctoral Fellowship   NSERC of Canada</b> Worth: 90 000\$	<b>09/2022 – 08/2024</b>
<b>Doctoral Award   Department of Statistical Sciences, University of Toronto</b> Worth: 3 000\$	<b>05/2022</b>
<b>Arts &amp; Science Doctoral Excellence Scholarship   University of Toronto</b> Worth: 5 000\$	<b>06/2021</b>
<b>Postgraduate Scholarship - Doctoral   NSERC of Canada</b> Worth: 42 000\$ (declined)	<b>09/2019 – 08/2021</b>
<b>Probability Section Student Research Presentation Award   SSC</b> Best student presentation in probability at the 2018 SSC annual meeting. Worth: 500\$	<b>06/2018</b>
<b>Ontario Graduate Scholarships   Government of Ontario</b> Awarded four (4) times. Worth: 15 000\$ each time	<b>09/2017 – 08/2021</b>
<b>Doctoral Scholarship   FRQNT</b> Worth: 60 000\$	<b>09/2017 – 08/2020</b>

## Teaching experience

<b>Instructor   University of Toronto</b> - STA247 (Probability with Computer Applications)	<b>05/2019 – 06/2019</b>
<b>Teaching Assistant   University of Toronto</b> - STA447 (Stochastic Processes) - STA2111 (Graduate Probability I) - STA490 (Statistical Consultation, Communication, and Collaboration)	<b>09/2018 – 04/2022</b>
<b>Instructor   Université de Montréal</b> - STT2100/STT6115 (Bayesian Decision Theory, Cross-listed graduate and undergraduate course)	<b>01/2017 – 04/2017</b>
<b>Teaching Assistant   Université de Montréal</b> - STT2000 (Survey Sampling Theory) - MAT1978 (Probability and Statistics for Scientists and Engineers) - STT3700 (Statistical Inference)	<b>01/2015 – 12/2016</b>

- STT1700 (Introduction to Statistics)
- MAT2717 (Stochastic Processes)
- STT1901 (Statistics for Social Scientists)

## Service and leadership

### Peer reviewer for statistical methodology journals

- Journal of Computational and Graphical Statistics
- Extremes
- Journal of the Royal Statistical Society: Series B
- Scandinavian Journal of Statistics
- Biometrika
- Electronic Journal of Statistics
- Bernoulli
- Canadian Journal of Statistics

### Evaluator for the European Laboratory for Learning and Intelligent Systems Ph.D. program

I was part of the team that evaluates applications to this prestigious, collaborative Ph.D. program for the 2022/23 academic year.

### President, Statistics Graduate Students' Union | University of Toronto 09/2018 – 08/2019

Responsibilities included supervising the executive committee's activities and communication with the department.

### Chair, Organizing committee, SGS Research Day 2019 | Fields Institute

Responsibilities included inviting speakers, securing space and funding, managing most of the local arrangements, supervising and animating the event. More information about the event on the [webpage](#).

### Committee Member, Association of Graduate Students in Mathematics and Statistics | Université de Montréal 11/2016 – 08/2017

I was in charge of organizing meetings and social activities for graduate students.

### Volunteer in various academic events

- DataFest, University of Toronto Scarborough, 05/2019
- Canadian Undergraduate Mathematics Conference, Montréal, 07/2017
- Congrès MATH.en.JEANS, Montréal | 03/2017

## Computer knowledge

**Advanced level:** R,  $\LaTeX$

**Introductory to intermediate level:** C, C++, html/css, markdown, SAS, SPSS, MATLAB, Mathematica

## Personal information

**Languages:** French (mother tongue), English (fluent), German (introductory)

**Citizenship:** Canadian