

# Olivier Binette | CV

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## Research Interests

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Bayesian and nonparametric statistics, posterior consistency, information inequalities, topological consistency.

## Education

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2017–now **PhD Candidate (Statistics)**

*Duke University*

2017–2019 **M. Sc. in Mathematics**

*Université du Québec à Montréal*

**Thesis:** Bayesian Nonparametrics for Directional Statistics (Advisor: Prof. Simon Guillotte).

2014–2017 **B. Sc. in Mathematics**

*Université du Québec à Montréal*

## Awards / Scholarships

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- 2019 Alexander-Graham-Bell Canada Graduate Scholarship (**NSERC**<sup>1</sup>; 105 000\$)
- 2019 **FRQNT**<sup>2</sup> Doctoral Research Scholarship (84 000\$)
- 2019 Offered admission to **Stanford University** (Statistics PhD)
- 2019 University of Toronto (FAST) Top Doctoral Fellowship Award (declined)
- 2017–2018 Alexander-Graham-Bell **NSERC** Master's Award (17 500\$)
- 2017–2019 **FRQNT** Master's Award (30 000\$)
- 2017 **NSERC** Undergraduate Research Award
- 2016 **NSERC** Undergraduate Research Award

## Publications / Preprints / Posters

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**Binette, O.** (2019) A Note on Reverse Pinsker Inequalities. *IEEE Transactions on Information Theory* 65 (7). pp. 4094-4096.

Preprints.....

**Binette, O.** et Guillotte, S. (2018) Bayesian Nonparametrics for Directional Statistics. *arXiv:1807.00305*. Submitted.

Posters.....

**Binette, O.** & Luo, L. An Analysis of Gibbs Posterior Concentration in Terms of the Separation  $\alpha$ -Entropy. O'Bayes Conference Warwick (United Kingdom). June 28, 2019

**Binette, O.** & Guillotte, S. BNP density estimation on compact metric spaces with a view towards circular statistics. 12th Conference on Bayesian Nonparametrics. Oxford (United Kingdom). June 24, 2019

**Binette, O.** & Coache, A. The Significance of the Adjusted R Squared. (Bio)Statistics Research Day. Montréal (Canada). September 21, 2018.

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<sup>1</sup>Natural Sciences and Engineering Research Council of Canada

<sup>2</sup>Fonds de recherche du Québec – Nature et technologies (Québec Research Fund - Nature and Technologies)

**Binette, O.** Classification and Topology, or Consequences of Sobolev Consistency. Canadian Statistics Student Conference. June 2, 2018.

**Binette, O.** & Guillotte, S. Semiparametric density modelling for directional statistics. 11th Conference on Bayesian Nonparametrics. Paris (France). June 26, 2017.

## Talks

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Invited.....

**MLBytes Speaker Series (Duke University):** Classification and Topology. North Carolina (United States). November 15, 2018.

**Texas A&M University Nonparametrics Group:** On Bayesian Nonparametric Estimation of Discontinuous Densities. Texas (United States). November 1, 2018. Invited by Professor Debdeep Pati.

**Université du Québec à Montréal:** A Circular Analogue to the Bernstein Polynomial Densities, Bayesian Nonparametrics and Large Support Asymptotics. Montréal (Canada). October 4, 2018. Invited by Professor Jean-François Coeurjolly.

**Sherbrooke University:** A Circular Analogue to the Bernstein Polynomial Densities. Sherbrooke (Canada). March 29, 2018. Invited by Professor Taoufik Bouezmarni.

Contributed.....

*Graduate Student Seminar - UQAM:* Computing the Hausdorff Alpha-Entropy. Montréal (Canada). July 24, 2018.

*Statistics Society of Canada Annual Meeting:* A Circular Analogue to the Bernstein Polynomial Densities. Montréal (Canada). June 4, 2018.

*Mathematical Sciences Institute's Student Conference:* Topologie et apprentissage machine. Sherbrooke (Canada). May 25, 2018.

*Probability and Statistics Student Seminar - UQAM:* Information, vraisemblance et divergence. Montréal (Canada). May 17, 2018.

*Graduate Student Seminar - UQAM:* Probabilités en dimension infinie. Montréal (Canada). December 4, 2017.

*Mathematical Congress of the Americas:* Bayesian Learning. Montréal (Canada). July 28, 2017.

*Canadian Undergraduate Mathematics Conference:* Bayesian Learning. Montréal (Canada). July 23, 2017.

*Probability and Statistics Student Seminar - UQAM:* Notions d'approximation constructive. Montréal (Canada). May 25, 2017.

## Academic Work Experience

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2017–2019 **Instructional Teaching Assistant at Université du Québec à Montréal**

*Statistics I, Probability II, Analysis I & II, Analysis and Algebra for the Actuarial Sciences, Complex Analysis. Animation of weekly problem-solving sessions for classrooms of 10 to 80 students.*

Summer 2017 **NSERC Research Internship**

Summer 2016 **NSERC Research Internship**

## Leadership and Service

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- Organizer of UQAM's Probability and Statistics Student Seminar during the 2016 and 2017 summers.
- Co-organizer of the Statistics Student Summit in Montréal (March 2019).

- Co-organizer of UQAM's Graduate Student in Mathematics Seminar (2018-2019).
- Member of UQAM's Graduate Mathematics Programs Committee.
- Co-organized an activity for children on behalf of the *Institut des Sciences Mathématiques* (ISM) at the Montréal Science Center (summer 2018).