

## CURRICULUM VITAE – Dr. Boris Beranger

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### PERSONAL DETAILS

*Address:* School of Mathematics and Statistics  
UNSW Sydney  
Sydney NSW 2052, Australia

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*Citizenship:* French

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### RESEARCH INTERESTS

My Google scholar profile can be accessed via <http://bit.do/e4pRB>. I have a general interest in Extreme Value Theory, both from a theoretical and methodological perspective. In particular, I am interested in modelling the dependence structure of multivariate and spatial extremes with an emphasis on environmental applications. I also conduct research on big data related problems and have recently developed a framework for statistical analysis based data summaries.

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### CURRENT POSITIONS

**Research Associate** 2016-  
UNSW Sydney  
*Supervisor:* Prof. Scott Sisson

**Associate Investigator** 2017-  
ARC Centre of Excellence for Mathematical and Statistical Frontiers

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### EDUCATION

**Ph.D. in Statistics** (under cotutelle) 2012-2016  
*Institutions:* Université Pierre and Marie Curie (UPMC), Paris 6  
UNSW Sydney  
*Supervisors:* Prof. Michel Broniatowski (UPMC)  
Prof. Scott Sisson (UNSW Sydney)  
Dr. Simone Padoan (Bocconi University of Milan, Italy)  
*Title:* “Modelling the dependence structure of multivariate and spatial extremes”.

**Masters of Mathematics (Statistics)** 2009-2011  
*Institution:* Université Pierre and Marie Curie (UPMC), Paris 6

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### REFEREED PUBLICATIONS

- [1.] Zhang, X., **Beranger, B.** and Sisson, S. A. (2019). “Constructing likelihood functions for interval-valued random variables”. To appear in *Scandinavian Journal of Statistics* (Q1).
- [2.] **Beranger, B.**, Padoan, S. A., Xu, Y. and Sisson, S. A. (2019). “Extremal properties of the multivariate extended skew-normal distribution, Part B”. *Statistics and Probability Letters* (Q3), 147, 105–114.
- [3.] **Beranger, B.**, Padoan, S. A., Xu, Y. and Sisson, S. A. (2019). “Extremal properties of the univariate extended skew-normal distribution, Part A”. *Statistics and Probability Letters* (Q3), 147, 73–82.

- [4.] **Beranger, B.**, Duong, T., Perkins-Kirkpatrick, S. and Sisson, S. A. (2019). "Tail density estimation for exploratory data analysis using kernel methods". *Journal of Nonparametric Statistics* (Q2), 31(1), 144–174.
- [5.] **Beranger, B.**, Padoan, S. A. and Sisson, S. A. (2017). "Models for extremal dependence derived from skew-symmetric families". *Scandinavian Journal of Statistics* (Q1), 44, 21–45.
- [6.] **Beranger, B.** and Padoan, S. A. (2015). "Extreme Dependence Models", in *Extreme Value Modelling and Risk Analysis: Methods and Applications*, 325–352, Chapman Hall/CRC.

SUBMITTED PAPERS

- [7.] **Beranger, B.**, Padoan, S. A. and Sisson, S. A. "Estimation and uncertainty quantification for extreme quantile regions".  
*Under second revision.*
- [8.] **Beranger, B.**, Lin, H. and Sisson, S. A. "New models for symbolic data analysis".
- [9.] **Beranger, B.**, Stephenson, A. G. and Sisson, S. A. "High dimensional inference using the extremal skew- $t$  processes".

PAPERS IN PREPARATION

- [10.] Whitaker, T., **Beranger, B.** and Sisson, S. A. "Composite likelihood methods for histogram-valued random variables".
- [11.] Brito, P., **Beranger, B.** and Sisson, S. A. "Interval-valued variables and quantile functions".
- [12.] **Beranger, B.**, McGree, J. M. and Sisson, S. A. "Design of interval and histogram random variables".
- [13.] Whitaker, T., **Beranger, B.** and Sisson, S. A. "Logistic regression model for histogram-valued data".
- [14.] Rahman, P., **Beranger, B.**, Roughan, M. and Sisson, S. A. "Fitting models to internet traffic networks with summarised data".
- [15.] **Beranger, B.**, Stewart, M. and Sisson, S. A. "Extremal type theorems for mean aggregated data".

GRANTS AND AWARDS

- Research Support Scheme** 2018  
*ARC Centre of Excellence for Mathematical and Statistical Frontiers*  
Financial support to establish a collaboration with CSIRO, Data61, Australia (\$7,600).
- J. B. Douglas award** 2014  
*NSW Branch of the Statistical Society of Australia (SSA)*  
Award for Postgraduate excellence.

Ph.D. SUPERVISION	<b>Prosha Rahman</b> , UNSW Sydney <i>Topic</i> : Symbolic data analysis for renewal processes. <i>Joint supervisor</i> : Prof. Scott Sisson.	2019-
	<b>Thomas Whitaker</b> , UNSW Sydney <i>Topic</i> : Statistical modelling using symbolic random variables. <i>Joint supervisor</i> : Prof. Scott Sisson.	2016-
MASTER AND HONOURS SUPERVISION	<b>Max Fisher</b> (Honours, <i>joint supervision</i> ), UNSW Sydney <i>Topic</i> : Statistical analysis using distribution-valued data.	2019
	<b>Lewis Wright</b> (Honours, <i>joint supervision</i> ), UNSW Sydney <i>Topic</i> : Extremal type theorems for symbolic data.	2019
	<b>Bowen Wang</b> (Masters, <i>joint supervision</i> ), UNSW Sydney <i>Thesis</i> : "Symbolic data analysis for generalized extreme value model".	2019
	<b>Yangfan Xu</b> (Masters, <i>joint supervision</i> ), UNSW Sydney <i>Thesis</i> : "On the extremes of extended skew-normal random variables".	2017
TEACHING ACTIVITIES	<b>Lecturer</b> , Introduction to Statistics and Statistical Computing (MATH5856) UNSW Sydney, School of Mathematics and Statistics Postgraduate course, Course convenor. <i>Evaluation (MyExperience report)</i> : Satisfaction = 100%, Mean score = 6/6, Response rate = 8/12.	Term 1, 2019
	<b>Lecturer</b> , Statistical Analysis of Dependent Data (MATH3841) UNSW Sydney, School of Mathematics and Statistics Third year course, Course convenor. <i>Evaluation (MyExperience report)</i> : Satisfaction = 100%, Mean score = 6/6, Response rate = 4/6.	Semester 2, 2018
	<b>Tutor</b> , Advanced topics in Statistical Machine Learning (COMP9418) UNSW Sydney, School of Computer Science and Engineering Postgraduate year course.	Semester 2, 2017
	<b>Tutor</b> , Calculus (MATH1131) UNSW Sydney, School of Mathematics and Statistics First year course Also taught in Semester 2, 2012 and Semester 1, 2015.	Semester 1, 2017
	<b>Tutor</b> , Statistics for Life and Social Sciences (MATH1041) UNSW Sydney, School of Mathematics and Statistics First year course Also taught in Semester 1 & 2, 2015.	Semester 1, 2017
	<b>Lecturer</b> , Introduction to Statistics Ecole Supérieure d'Ingénieur Leonard de Vinci, Courbevoie, France First year course in engineering school Also taught in Semester 2, 2013.	Semester 1, 2014

**Lecturer**, Introduction to Statistics & Probability Semester 1, 2014  
 Ecole Supérieure des Sciences Commerciales d'Angers,  
 Boulogne, France  
 First year course in business school.

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INVITED TALKS	11th International Conference of the ERCIM WG on Computational and Methodological Statistics, University of Pisa, (Italy). "Inference for extremal- $t$ and skew- $t$ max-stable models in high dimensions".	2018
	Data science: new data, new paradigms: From data to classes and classes as statistical units, University of Paris Dauphine (France). "Extreme value analysis using symbolic data".	2018
	9th International Conference of the ERCIM WG on Computational and Methodological Statistics, University of Seville (Spain). "On some features of the skewed families of max-stable processes".	2016
	8th International Conference of the ERCIM WG on Computational and Methodological Statistics, Senate House, University of London (UK). "Extremes of Skew-Symmetric distributions".	2015

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SEMINARS	Australian National University (Australia). "New models for symbolic data analysis".	2019
	Melbourne University (Australia). "First steps in the analysis of Symbolic Data".	2017

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CONTRIBUTED TALKS	10th Conference on Extreme Value Analysis, TU Delft (Netherlands). "A composite likelihood based approach for max-stable processes using histogram-valued variables".	2017
	Australian Statistical Conference, Canberra (Australia). "On some features of the skewed families of max-stable processes".	2016
	9th Conference on Extreme Value Analysis, University of Michigan (USA). "Exploratory data analysis of extreme values using non-parametric kernel methods".	2015
	Australian Statistical Conference in conjunction with the Institute of Mathematical Statistics Annual Meeting, Sydney (Australia). "Likelihood based estimation method for Extreme dependence models".	2014

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REFEREEING	Spatial Statistics (Q1) <a href="https://www.journals.elsevier.com/spatial-statistics">https://www.journals.elsevier.com/spatial-statistics</a>	
	Statistics and Computing (Q1) <a href="https://www.springer.com/statistics/journal/11222">https://www.springer.com/statistics/journal/11222</a>	

Stochastic Environmental Research and Risk Assessment (Q1)  
<http://www.springer.com/environment/journal/477>

Weather and Climate Extremes (Q1)  
<https://www.journals.elsevier.com/weather-and-climate-extremes>

Journal of Agricultural, Biological, and Environmental Statistics (Q2)  
<https://www.springer.com/statistics/journal/13253>

Statistics (Q2)  
<https://www.tandfonline.com/loi/gsta20>

Dependence Modeling (Q3)  
<https://www.degruyter.com/view/j/demo>

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SOFTWARE	<p>R package <b>ExtremalDep</b> (Extremal Dependence) Available on R-Forge and CRAN. <i>Description:</i> Provides a set of procedures for modelling parametrically and non-parametrically the dependence structure of multivariate extreme-values. The statistical inference is performed with non-parametric estimators, likelihood-based estimators and Bayesian techniques. <i>Collaborators:</i> Dr. Giulia Marcon and Dr Simone Padoan.</p>
CURRENT RES- -PONSIBILITIES	<p><b>Statistical Society of Australia, NSW Branch</b> Treasurer 2018- Member of the council 2017-</p> <p><b>UNSW Statistics Seminar Series</b> Organiser 2018-</p>
OUTREACH	<p><b>Year 10 Work Experience Program</b> 2017-2019 <i>ACEMS initiative with Mosman High School</i> 7 day program involving a dozen of high school students.</p>
OTHER	<p><b>Organising committee member</b> 2017 <i>Early Career Researchers Retreat, Gold Coast (Australia)</i> Part of ARC Centre of Excellence for Mathematical and Statistical Frontiers annual retreat.</p> <p><b>Statistics Reading Group</b> 2016-2018 <i>Organizer</i> School of Mathematics and Statistics, UNSW Sydney</p> <p><b>Organising committee member</b> 2014 <i>1st Annual Postgraduate Conference</i> School of Mathematics and Statistics, UNSW Sydney</p>

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REFERREES

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