# JASON M. KLUSOWSKI

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## EDUCATION

**Yale University** 2013 - 2018
*Ph.D. in Statistics & Data Science* *New Haven, Connecticut, USA*

- Advisor: Professor Andrew R. Barron
- Thesis: "Density, Function, and Parameter Estimation with High-Dimensional Data"
- Francis J. Anscombe Award: "Given on an occasional basis for outstanding academic performance in the Department of Statistics."

**University of Manitoba** 2008 - 2013
*B.Sc. (Honors) in Mathematics & Statistics* *Winnipeg, Manitoba, Canada*

- Governor General's Silver Medal: "Awarded to the undergraduate who achieves the highest academic standing upon graduation from a bachelor degree program."

## EMPLOYMENT

**Assistant Professor, Department of Operations Research & Financial Engineering** 2020 - Present
*Princeton University* *Princeton, New Jersey, USA*

**Assistant Professor, Department of Statistics** 2018 - 2020
*Rutgers, the State University of New Jersey* *Piscataway, New Jersey, USA*

## GRANTS

**NSF DMS-1915932 "Deep Learning & Random Forests for High-Dimensional Regression"** 2019 - 2022
*Principal Investigator* *$180,000*

**NSF TRIPODS-1934924 "Data Science Principles of the Human-Machine Convergence"** 2019 - 2022
*Senior Personnel* *$500,000*

## RESEARCH PAPERS

### Published

1. Victor-Emmanuel Brunel, **Klusowski, Jason M** Klusowski, and Dana Yang. Estimation of convex supports from noisy measurements. *To appear, Bernoulli*, 2020
2. **Klusowski, Jason M** and Yihong Wu. Estimating the number of connected components in a graph via subgraph sampling. *To appear, Bernoulli*, 2020
3. Zhiqi Bu, **Klusowski, Jason M**, Cynthia Rush, and Weijie Su. Algorithmic analysis and statistical estimation of SLOPE via approximate message passing. In *Advances in Neural Information Processing Systems*, 2019
4. J. M. Klusowski, D. Yang, and W. D. Brinda. Estimating the coefficients of a mixture of two linear regressions by expectation maximization. *IEEE Transactions on Information Theory*, 65(6):3515–3524, June 2019
5. WD Brinda, **Klusowski, Jason M**, and Dana Yang. Hölder's identity. *Statistics & Probability Letters*, 148:150–154, 2019

6. **Klusowski, Jason M** and Andrew R. Barron. Approximation by combinations of ReLU and squared ReLU ridge functions with $\ell^1$ and $\ell^0$ controls. *IEEE Transactions on Information Theory*, 64(12):7649–7656, Dec 2018

7. **Klusowski, Jason M** and Yihong Wu. Counting motifs with graph sampling. In Sébastien Bubeck, Vianney Perchet, and Philippe Rigollet, editors, *Proceedings of the 31st Conference On Learning Theory*, volume 75 of *Proceedings of Machine Learning Research*, pages 1966–2011. PMLR, 06–09 Jul 2018

8. W. D. Brinda and **Klusowski, Jason M**. Finite-sample risk bounds for maximum likelihood estimation with arbitrary penalties. *IEEE Transactions on Information Theory*, 64(4):2727–2741, 2018

9. **Klusowski, Jason M** and Andrew R. Barron. Minimax lower bounds for ridge combinations including neural nets. In *Information Theory (ISIT), 2017 IEEE International Symposium on*, pages 1376–1380. IEEE, 2017

**Under Review**

1. Zhiqi Bu, **Klusowski, Jason M**, Cynthia Rush, and Weijie Su. Optimal SLOPE power and false positives trade-off. 2020

2. **Klusowski, Jason M**. Sharp analysis of a simple model for random forests. *Revise and resubmit to Bernoulli*, 2019

3. Andrew R. Barron and **Klusowski, Jason M**. Approximation and estimation for high-dimensional deep learning networks. *Revise and resubmit to IEEE Transactions on Information Theory*, 2019

4. Ryan Theisen, **Klusowski, Jason M**, Huan Wang, Nitish Shirish Keskar, Caiming Xiong, and Richard Socher. Global capacity measures for deep ReLU networks via path sampling. *arXiv preprint arXiv:1910.10245*, 2019

5. **Klusowski, Jason M**. Analyzing CART. *arXiv preprint arXiv:1906.10086*, 2019

## OTHER RESEARCH PROJECTS

**Yale University School of Management** 2014 - 2016
*Research Assistant* *New Haven, CT, USA*

· Supervisor: Dr. Marina Niessner
· Topics: Analyzed investor disagreement on social media platform; built classification models to predict sentiment from text
· Project Title: *Why Don't We Agree? Evidence from a Social Network of Investors*
· J. Anthony Cookson and Marina Niessner. Why don't we agree? Evidence from a social network of investors. *The Journal of Finance*, 2019

## TEACHING EXPERIENCE

**Rutgers University, Department of Statistics** Spring 2020
*Instructor* *New Brunswick, NJ, USA*

· STAT 597 - Data Wrangling & Husbandry (MSDS)

**Rutgers University, Department of Statistics** Fall 2019
*Instructor* *New Brunswick, NJ, USA*

· STAT 534 - Statistical Learning for Data Science (MSDS)

**Rutgers University, Department of Statistics** Fall 2018
*Instructor* *New Brunswick, NJ, USA*

· STAT 581 - Probability & Statistical Inference (MSDS & FSRM)

**Rutgers University, Department of Statistics** Spring 2019
*Instructor* *New Brunswick, NJ, USA*

· STAT 597 - Data Wrangling & Husbandry (MSDS)

**Yale University, Department of Statistics & Data Science** 2014 - 2017
*Teaching Fellow* *New Haven, CT, USA*

· STAT 664 - Information Theory
· STAT 541 - Probability Theory
· STAT 365 - Data Mining and Machine Learning
· STAT 312 - Linear Models
· STAT 238 - Probability and Statistics

## INVITED TALKS & PRESENTATIONS

**University of California, Berkeley** May 28, 2020
*Invited virtual seminar for Michael Mahoney's group*

**Princeton University** November 22, 2019
*Department of Operations Research & Financial Engineering*

**Rutgers University, New Brunswick** October 2, 2019
*Department of Electrical and Computer Engineering*

**Pennsylvania State University** September 27, 2019
*Department of Mathematics*

**Columbia University** September 16, 2019
*Department of Statistics*

**Duke University** August 13, 2019
*SAMSI Deep Learning Workshop*

**Colgate-Palmolive Company** August 6, 2019

**Merck & Co., Inc.** July 17, 2019

**Columbia University** June 19, 2019
*Workshop on Machine Learning and Data Science*

**Virginia Tech** May 22, 2019
*IMS/ASA Spring Research Conference*

**New England Statistics Symposium** May 17, 2019

**Princeton University** April 8, 2019
*Department of Operations Research & Financial Engineering*

**University of Maryland - College Park** October 16, 2018
*Department of Mathematics*

**Georgia Institute of Technology** October 8, 2018
*Workshop on Theoretical Foundation of Deep Learning*

**Simon Fraser University** July 26, 2018
*20th IMS New Researchers Conference*

**Massachusetts Institute of Technology** June 11, 2018
*Workshop on Sublinear Algorithms*

**Baruch College, Zickilin School of Business** February 14, 2018
*Department of Information Systems and Statistics*

**University of North Carolina - Chapel Hill** February 5, 2018
*Department of Statistics and Operations Research*

**Rutgers University** February 1, 2018
*Department of Statistics and Biostatistics*

**University of Delaware** January 23, 2018
*Department of Applied Economics and Statistics*

**Indiana University** January 16, 2018
*Department of Statistics*

**University of Notre Dame** January 12, 2018
*Department of Applied and Computational Mathematics and Statistics*

**Queen's University** November 29, 2017
*Department of Mathematics and Statistics*

**IEEE International Symposium on Information Theory** June 27, 2017
*Aachen, Germany*

**Boston Machine Learning Group** June 6, 2016
*StubHub, Boston, MA, USA*

**Université de Montréal** July 2013
*Canadian Undergraduate Mathematics Conference*

**UBC Okanagan** July 2012
*Canadian Undergraduate Mathematics Conference*

## SERVICE

**NSF Panelist in Statistics** March 2020

**Ad-hoc Reviewer** 2016 - Present

- *Annals of Statistics*
- *Electronic Journal of Statistics*
- *Journal of the American Statistical Association*
- *Statistica Sinica*
- *Journal of Machine Learning Research*
- *IEEE Transactions on Signal and Information Processing over Networks*
- *IEEE Transactions on Information Theory*
- *Entropy*
- *Applied and Computational Harmonic Analysis*
- *Journal of Nonparametric Statistics*
- *Statistical Science*
- *Neural Networks*
- *Operations Research*

- *SIAM Journal on Mathematics of Data Science*
- *Probability & Statistics Letters*
- *2018 IEEE International Symposium on Information Theory (ISIT)*
- *2019 IEEE International Symposium on Information Theory (ISIT)*
- *2019 International Conference on Machine Learning (ICML)*

**Rutgers University, Committee Member** Fall 2018 - Present

- Financial Statistics and Risk Management Program
- Professional Master's Program in Data Science
- Undergraduate Studies
- Student Outreach
- Social / Retreat

**University of Manitoba, Department of Statistics Departmental Council** 2012

- Undergraduate Student Representative (voting member)

## AFFILIATIONS

IEEE Information Theory Society
American Statistical Association

## AWARDS & SCHOLARSHIPS

**Yale University** 2014 - 2016

- *Clarke Fellow*
  Wedworth W. Clarke (B.A. 1906) Scholarship Fund

**Government of Canada** 2013

- *NSERC Alexander Graham Bell Canada Graduate Scholarship* ($17,500)
  NSERC Postgraduate Scholarship accepted in its place

**Government of Canada** 2011 - 2013

- *NSERC Undergraduate Summer Research Award* ($4,500)

**University of Manitoba** 2013

- *Governor General's Silver Medal*
  For highest academic standing at the undergraduate level
- *Faculty of Science Medal in B.Sc. (Honours)*
  For highest standing in a faculty or school program
- *Robert Ross McLaughlin Scholarship in Mathematics* For a full-time student who has achieved the highest standing in the third year of any mathematics honours program

**University of Manitoba** 2012

- *St. Paul's College, Patrick Burke-Gaffney Prize in Mathematics*
  For academic achievement
- *Dr. Cyril H. Goulden Memorial Scholarship in Statistics*
  For high standing in honours statistics
- *University of Manitoba Student's Union Scholarship*
  For excellence in academic achievement at the University of Manitoba
- *University of Manitoba Merit Award*

**University of Manitoba** 2011

- *Agnes Stewart Hart Award in Mathematics*
  For high standing in the major or honours program in mathematics by a second or third year degree student in the Faculty of Science
- *University of Manitoba Student's Union Scholarship*
  For excellence in academic achievement at the University of Manitoba

**University of Manitoba** 2010

- *Isbister Scholarship in University 1*
  For highest standing in University 1 and continuation in any degree program at the University of Manitoba
- *Rosabelle Searle Leach Scholarship in Science*
  For highest standing in first year science)
- *Science Classes of 1943 and 1968 Reunion Scholarship (2x)*
  For academic achievement in the first year of an undergraduate program in science
- *University of Manitoba Student's Union Scholarship*
  For excellence in academic achievement at the University of Manitoba
- *University of Manitoba Calculus Prize - Nelson Education*

## TECHNICAL STRENGTHS

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|---|---|
| Computer Languages | R, Python, MATLAB |