

# JASON M. KLUSOWSKI

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## EDUCATION

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**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

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**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

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**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

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### Published

1. Zhiqi Bu, Jason M Klusowski, Cynthia Rush, and Weijie Su. Algorithmic analysis and statistical estimation of SLOPE via approximate message passing. *IEEE Transactions on Information Theory*, 67(1):506–537, 2021
2. Jason M Klusowski. Sparse learning with CART. In *Advances in Neural Information Processing Systems*, 2020
3. Victor-Emmanuel Brunel, Jason M Klusowski, and Dana Yang. Estimation of convex supports from noisy measurements. *To appear, Bernoulli*, 2020
4. Jason M Klusowski and Yihong Wu. Estimating the number of connected components in a graph via subgraph sampling. *Bernoulli*, 26(3):1635–1664, 2020
5. Zhiqi Bu, Jason M Klusowski, Cynthia Rush, and Weijie Su. Algorithmic analysis and statistical estimation of SLOPE via approximate message passing. In *Advances in Neural Information Processing Systems*, 2019

6. Jason M Klusowski, Dana Yang, and WD Brinda. Estimating the coefficients of a mixture of two linear regressions by expectation maximization. *IEEE Transactions on Information Theory*, 65(6):3515–3524, 2019
7. WD Brinda, Jason M Klusowski, and Dana Yang. Hölder’s identity. *Statistics & Probability Letters*, 148:150–154, 2019
8. Jason M Klusowski 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
9. Jason M Klusowski 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
10. WD Brinda and Jason M Klusowski. Finite-sample risk bounds for maximum likelihood estimation with arbitrary penalties. *IEEE Transactions on Information Theory*, 64(4):2727–2741, 2018
11. Jason M Klusowski 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. Jason M Klusowski and Peter M Tian. Nonparametric variable screening with optimal decision stumps. *arXiv preprint arXiv:2011.02683*, 2020
2. Jason M Klusowski. Sparse learning with CART. *Revise and resubmit to IEEE Transactions on Information Theory*, 2020
3. Ryan Theisen, Jason M Klusowski, and Michael W Mahoney. Good linear classifiers are abundant in the interpolating regime. *arXiv preprint arXiv:2006.12625*, 2020
4. Jason M Klusowski. Sharp analysis of a simple model for random forests. *arXiv preprint arXiv:1805.02587*, 2020
5. Andrew R Barron and Jason M Klusowski. Approximation and estimation for high-dimensional deep learning networks. *Revise and resubmit to IEEE Transactions on Information Theory*, 2019

### TEACHING EXPERIENCE

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<b>Princeton University, Department of Operations Research &amp; Financial Engineering</b> <i>Instructor</i>	Spring 2021 <i>Princeton, NJ, USA</i>
· ORF 504 / FIN 504 - Financial Econometrics	
<b>Rutgers University, Department of Statistics</b> <i>Instructor</i>	Spring 2020 <i>New Brunswick, NJ, USA</i>
· STAT 597 - Data Wrangling & Husbandry (MSDS)	
<b>Rutgers University, Department of Statistics</b> <i>Instructor</i>	Fall 2019 <i>New Brunswick, NJ, USA</i>
· STAT 534 - Statistical Learning for Data Science (MSDS)	
<b>Rutgers University, Department of Statistics</b> <i>Instructor</i>	Fall 2018 <i>New Brunswick, NJ, USA</i>
· STAT 581 - Probability & Statistical Inference (MSDS & FSRM)	
<b>Rutgers University, Department of Statistics</b> <i>Instructor</i>	Spring 2019 <i>New Brunswick, NJ, USA</i>
· STAT 597 - Data Wrangling & Husbandry (MSDS)	

- 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

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<b>CMStatistics</b> <i>Recent Advances Toward Understanding Deep Learning</i>	December 19, 2020
<b>NeurIPS</b> <i>Virtual poster presentation</i>	December 10, 2020
<b>Merck &amp; Co., Inc.</b> <i>Biostatistics group</i>	October 14, 2020
<b>Purdue University</b> <i>Department of Mathematics</i>	October 5, 2020
<b>One World Seminar Series on the Mathematics of Machine Learning</b>	September 30, 2020
<b>Joint Statistical Meetings (JSM)</b> <i>Theoretical Advances in Deep Learning</i>	August 5, 2020
<b>University of California, Berkeley</b> <i>Invited virtual seminar for Michael Mahoney's group</i>	May 28, 2020
<b>Princeton University</b> <i>Department of Operations Research &amp; Financial Engineering</i>	November 22, 2019
<b>Rutgers University, New Brunswick</b> <i>Department of Electrical and Computer Engineering</i>	October 2, 2019
<b>Pennsylvania State University</b> <i>Department of Mathematics</i>	September 27, 2019
<b>Columbia University</b> <i>Department of Statistics</i>	September 16, 2019
<b>Duke University</b> <i>SAMSI Deep Learning Workshop</i>	August 13, 2019
<b>Colgate-Palmolive Company</b>	August 6, 2019
<b>Merck &amp; Co., Inc.</b> <i>Biostatistics group</i>	July 17, 2019
<b>Columbia University</b> <i>Workshop on Machine Learning and Data Science</i>	June 19, 2019
<b>Virginia Tech</b> <i>IMS/ASA Spring Research Conference</i>	May 22, 2019

<b>New England Statistics Symposium</b>	May 17, 2019
<b>Princeton University</b> <i>Department of Operations Research &amp; Financial Engineering</i>	April 8, 2019
<b>University of Maryland - College Park</b> <i>Department of Mathematics</i>	October 16, 2018
<b>Georgia Institute of Technology</b> <i>Workshop on Theoretical Foundation of Deep Learning</i>	October 8, 2018
<b>Simon Fraser University</b> <i>20th IMS New Researchers Conference</i>	July 26, 2018
<b>Massachusetts Institute of Technology</b> <i>Workshop on Sublinear Algorithms</i>	June 11, 2018
<b>Baruch College, Zicklin School of Business</b> <i>Department of Information Systems and Statistics</i>	February 14, 2018
<b>University of North Carolina - Chapel Hill</b> <i>Department of Statistics and Operations Research</i>	February 5, 2018
<b>Rutgers University</b> <i>Department of Statistics and Biostatistics</i>	February 1, 2018
<b>University of Delaware</b> <i>Department of Applied Economics and Statistics</i>	January 23, 2018
<b>Indiana University</b> <i>Department of Statistics</i>	January 16, 2018
<b>University of Notre Dame</b> <i>Department of Applied and Computational Mathematics and Statistics</i>	January 12, 2018
<b>Queen's University</b> <i>Department of Mathematics and Statistics</i>	November 29, 2017
<b>IEEE International Symposium on Information Theory</b> <i>Aachen, Germany</i>	June 27, 2017
<b>Boston Machine Learning Group</b> <i>StubHub, Boston, MA, USA</i>	June 6, 2016
<b>Université de Montréal</b> <i>Canadian Undergraduate Mathematics Conference</i>	July 2013
<b>UBC Okanagan</b> <i>Canadian Undergraduate Mathematics Conference</i>	July 2012

## SERVICE

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### Students

- Felix Ackon, Princeton ORFE Graduate Research Advisor, 2020-2021
- Peter Tian, Princeton ORFE Graduate Research Advisor, 2020-2021
- Wilbur Wang, Princeton ORFE Senior Thesis Advisor, 2020-2021

- Cristina Hain, Princeton ORFE Senior Thesis Advisor, 2020-2021
- Sabarish Sainathan, Princeton COS Senior Thesis Advisor, 2020-2021
- Ting Yang, Rutgers PhD Thesis Defense Committee Member, 2019

**Princeton University, Committee Member**

Fall 2020-Present

- S. S. Wilks Memorial Seminar in Statistics Chair

**Rutgers University, Committee Member**

Fall 2018-Spring 2020

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

**NSF DMS 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*
- *Mathematics of Operations Research*
- *SIAM Journal on Mathematics of Data Science*
- *Annales de l'Institut Henri Poincaré (B) Probabilités et Statistiques*
- *Biometrics*
- *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)*
- *The Thirty-fourth Conference on Neural Information Processing Systems (NeurIPS)*
- *The 24th International Conference on Artificial Intelligence and Statistics (AISTATS)*

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

2012

- Undergraduate Student Representative (voting member)

**AFFILIATIONS**

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IEEE Information Theory Society  
 American Statistical Association

## AWARDS & SCHOLARSHIPS

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- 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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