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-2054808 "Deep Learning & Random Forests for High-Dimensional Regression" 2020-2022
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. Ryan Theisen, Jason M Klusowski, and Michael W Mahoney. Good Classifiers are Abundant in the Interpolating Regime. In Arindam Banerjee and Kenji Fukumizu, editors, *Proceedings of The 24th International Conference on Artificial Intelligence and Statistics*, volume 130 of *Proceedings of Machine Learning Research*, pages 3376–3384. PMLR, 13–15 Apr 2021

2. Jason M Klusowski and Peter Tian. Nonparametric Variable Screening with Optimal Decision Stumps. In Arindam Banerjee and Kenji Fukumizu, editors, *Proceedings of The 24th International Conference on Artificial Intelligence and Statistics*, volume 130 of *Proceedings of Machine Learning Research*, pages 748–756. PMLR, 13–15 Apr 2021

3. Jason M Klusowski. Sharp Analysis of a Simple Model for Random Forests. In Arindam Banerjee and Kenji Fukumizu, editors, *Proceedings of The 24th International Conference on Artificial Intelligence and Statistics*, volume 130 of *Proceedings of Machine Learning Research*, pages 757–765. PMLR, 13–15 Apr 2021

4. Zhiqi Bu, Jason M Klusowski, Cynthia Rush, and Weijie J Su. Algorithmic Analysis and Statistical Estimation of SLOPE via Approximate Message Passing. *IEEE Transactions on Information Theory*, 67(1):506–537, 2021

5. Victor-Emmanuel Brunel, Jason M Klusowski, and Dana Yang. Estimation of Convex Supports from Noisy Measurements. *Bernoulli*, 27(2):772 – 793, 2021

6. Jason M Klusowski. Sparse Learning with CART. In H. Larochelle, M. Ranzato, R. Hadsell, M. F. Balcan, and H. Lin, editors, *Advances in Neural Information Processing Systems*, volume 33, pages 11612–11622. Curran Associates, Inc., 2020

7. Jason M Klusowski and Yihong Wu. Estimating the Number of Connected Components in a Graph via Subgraph Sampling. *Bernoulli*, 26(3):1635 – 1664, 2020

8. 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

9. WD Brinda, Jason M Klusowski, and Dana Yang. Hölder's Identity. *Statistics & Probability Letters*, 148:150–154, 2019

10. Jason M Klusowski and Andrew R Barron. Approximation by Combinations of ReLU and Squared ReLU Ridge Functions With ℓ^1 and ℓ^0 Controls. *IEEE Transactions on Information Theory*, 64(12):7649–7656, 2018

11. 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

12. 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

13. Jason M Klusowski and Andrew R Barron. Minimax Lower Bounds for Ridge Combinations Including Neural Nets. In *2017 IEEE International Symposium on Information Theory (ISIT)*, pages 1376–1380, 2017

Under Review

1. Jason M Klusowski. Universal Consistency of Decision Trees for High Dimensional Additive Models. *Submitted to Annals of Statistics*, 2021. Preprint available at `https://arxiv.org/abs/2104.13881`

2. 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*, 2021. Preprint available at `https://arxiv.org/abs/1809.03090`

In Preparation

1. Zhiqi Bu, Jason M Klusowski, Cynthia Rush, and Weijie Su. Characterizing the SLOPE Trade-off: A Variational Perspective and the Donoho–Tanner Limit. *In preparation for Annals of Statistics*, 2021

TEACHING EXPERIENCE

Princeton University, Department of Operations Research & Financial Engineering Fall 2021
Instructor *Princeton, NJ, USA*

· ORF 405 - Regression and Applied Time Series

Princeton University, Department of Operations Research & Financial Engineering Spring 2021
Instructor *Princeton, NJ, USA*

· ORF 504 / FIN 504 - Financial Econometrics

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

6th Canadian Conference in Applied Statistics July, 2021
Session on statistics and deep learning *Invited virtual speaker*

International Indian Statistical Association May, 2021
Session on random forests and ensemble learning *Invited virtual speaker*

AISTATS April 13, 2021
Virtual poster presentation

University of Florida March 11, 2021
Department of Statistics *Invited virtual seminar*

CMStatistics December 19, 2020
Recent Advances Toward Understanding Deep Learning

NeurIPS December 10, 2020
Virtual poster presentation

Merck & Co., Inc. October 14, 2020
Biostatistics group

Purdue University October 5, 2020
Department of Mathematics

One World Seminar Series on the Mathematics of Machine Learning September 30, 2020

Joint Statistical Meetings (JSM) August 5, 2020
Theoretical Advances in Deep Learning

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
Biostatistics group

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

Students

- Ryan Theisen, UC Berkeley Statistics, Graduate Mentor, 2020-present
- Peter Tian, Princeton ORFE Graduate Research Advisor, 2020-present
- 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 Organizer 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*
- *Signal Processing*
- *Statistical Analysis and Data Mining*
- *Journal of Statistical Planning and Inference*
- *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)*
- *The 34th Annual Conference on Learning Theory (COLT 2021)*

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

Computer Languages	R, Python, MATLAB