

# JASON M. KLUSOWSKI

Department of Statistics  
Rutgers University – New Brunswick  
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## EDUCATION

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<b>Yale University</b> <i>Ph.D. in Statistics &amp; Data Science</i>	2013 - 2018 <i>New Haven, Connecticut, USA</i>
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- 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.”

<b>University of Manitoba</b> <i>B.Sc. (Honors) in Mathematics &amp; Statistics</i>	2008 - 2013 <i>Winnipeg, Manitoba, Canada</i>
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- 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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<b>Assistant Professor, Department of Statistics</b> <i>Rutgers, the State University of New Jersey</i>	Fall 2018 - Present <i>Piscataway, New Jersey, USA</i>
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## GRANTS

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<b>NSF DMS-1915932 “Deep Learning &amp; Random Forests for High-Dimensional Regression”</b> <i>PI</i>	2019 - 2022 <i>\$ 180,000</i>
<b>NSF TRIPODS-1934924 “Data Science Principles of the Human-Machine Convergence”</b> <i>Senior Personnel</i>	2019 - 2022 <i>\$ 500,000</i>

## 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. In *Advances in Neural Information Processing Systems*, 2019
2. **Jason M. Klusowski** and Yihong Wu. Estimating the number of connected components in a graph via subgraph sampling. *To appear, Bernoulli*, 2019
3. 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
4. WD Brinda, **Jason M. Klusowski**, and Dana Yang. Hölder’s identity. *Statistics & Probability Letters*, 148:150–154, 2019

5. **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
6. **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
7. W. D. 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
8. **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. Ryan Theisen, **Jason M. Klusowski**, 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
2. **Jason M. Klusowski**. Analyzing CART. *arXiv preprint arXiv:1906.10086*, 2019
3. Andrew R. Barron and **Jason M. Klusowski**. Approximation and estimation for high-dimensional deep learning networks. *arXiv preprint arXiv:1809.03090*, 2018
4. **Jason M. Klusowski**. Sharp analysis of a simple model for random forests. *arXiv preprint arXiv:1805.02587*, 2018
5. Victor-Emmanuel Brunel, **Jason M. Klusowski** Klusowski, and Dana Yang. Estimation of convex supports from noisy measurements. *arXiv preprint arXiv:1804.09879*, 2018
6. **Jason M. Klusowski** and W. D. Brinda. Statistical guarantees for estimating the centers of a two-component Gaussian mixture by EM. *arXiv preprint arXiv:1608.02280*, 2016
7. **Jason M. Klusowski** and Andrew R. Barron. Risk bounds for high-dimensional ridge function combinations including neural networks. *arXiv preprint arXiv:1607.01434*, 2016

#### OTHER RESEARCH PROJECTS

**Yale University School of Management**  
Research Assistant

2014 - 2016

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**  
Instructor

Fall 2019

New Brunswick, NJ, USA

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

**Rutgers University, Department of Statistics**  
Instructor

Fall 2018

New Brunswick, NJ, USA

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

**Rutgers University, Department of Statistics**

*Instructor*

Spring 2019  
New Brunswick, NJ, USA

- STAT 597 - Data Wrangling & Husbandry (MSDS)

**Yale University, Department of Statistics & Data Science**

*Teaching Fellow*

2014 - 2017  
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

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**Rutgers University**

*Department of Electrical and Computer Engineering*

October 2, 2019

**Pennsylvania State University**

*Department of Mathematics*

September 27, 2019

**Columbia University**

*Department of Statistics*

September 16, 2019

**Duke University**

*SAMSI Deep Learning Workshop*

August 13, 2019

**Colgate-Palmolive Company**

August 6, 2019

**Merck & Co., Inc.**

July 17, 2019

**Columbia University**

*Workshop on Machine Learning and Data Science*

June 19, 2019

**Virginia Tech**

*IMS/ASA Spring Research Conference*

May 22, 2019

**New England Statistics Symposium**

May 17, 2019

**Princeton University**

*Department of Operations Research & Financial Engineering*

April 8, 2019

**University of Maryland - College Park**

*Department of Mathematics*

October 16, 2018

**Georgia Institute of Technology**

*Workshop on Theoretical Foundation of Deep Learning*

October 8, 2018

**Simon Fraser University**

*20th IMS New Researchers Conference*

July 26, 2018

**Massachusetts Institute of Technology**

*Workshop on Sublinear Algorithms*

June 11, 2018

**Baruch College, Zicklin School of Business**

*Department of Information Systems and Statistics*

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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<b>Ad-hoc Reviewer</b>	2016 - Present
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- *Annals 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*
- *Journal of Nonparametric Statistics*
- *Statistical Science*
- *Neural Networks*
- *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)*

<b>Rutgers University, Committee Member</b>	Fall 2018 - Present
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- 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

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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*  
NSERC Postgraduate Scholarship accepted in its place

**Government of Canada**

2011 - 2013

- *NSERC Undergraduate Summer Research Award*

**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

## REFERENCES

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1. Andrew R. Barron, Professor of Statistics & Data Science  
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Phone: (203)-432-0634  
Yale Department of Statistics & Data Science  
24 Hillhouse Avenue  
New Haven, Connecticut 06511
2. Yihong Wu, Associate Professor of Statistics & Data Science  
Email: [yihong.wu@yale.edu](mailto:yihong.wu@yale.edu)  
Phone: (203)-432-0634  
Yale Department of Statistics & Data Science  
24 Hillhouse Avenue  
New Haven, Connecticut 06511
3. Jessi Cisewski, Assistant Professor of Statistics & Data Science  
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Phone: (203)-432-0634  
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