Jiasen Yang

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Research Interests

Machine learning, statistical network analysis, point processes, kernel and nonparametric methods, approximate Bayesian inference, randomized sketching methods

Education

Purdue University

Ph.D., Statistics (GPA: 3.94/4.0) 2013 – 2019

Advisor: Jennifer Neville (Departments of Computer Science and Statistics)

M.S., Statistics and Computer Science (GPA: 4.0/4.0) 2013 – 2015

University of Science and Technology of China

B.S., Statistics (Special Class for the Gifted Young) 2009 – 2013

Professional Experience

Research Assistant *Purdue University* Aug. 2015 – Present

- Developed kernel-based nonparametric goodness-of-fit tests for discrete distributions and point processes with intractable normalization constants using Stein's method.
- Proposed latent space models for dynamic network data based on Poisson and Hawkes processes to capture homophily and reciprocity with network embeddings.
- Developed estimation methods with statistical guarantees for learning relational models from partial crawls of large-scale networks.
- Proposed iterative, sketching-based algorithms for high-dimensional ridge regression and linear discriminant analysis.

Quantitative Analyst Intern *Google, Mountain View* May – Aug. 2016

- Performed analysis of generalized linear mixed-effects models for display advertising.

Data Science Research Intern *The Nielsen Company, Chicago* May – Aug. 2015

- Developed statistical models and visualization tools for sales time series data.

Instructor & Teaching Assistant *Purdue University* Aug. 2013 – May 2015

- Delivered lectures; prepared homeworks and exams for undergraduate statistics courses.

Refereed Publications

Changping Meng, **Jiasen Yang**, Bruno Ribeiro, and Jennifer Neville. HATS: A hierarchical sequence-attention framework for inductive set-of-sets embeddings. In *Proceedings of the 25th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD)*, 2019. (Oral presentation)

Agniva Chowdhury, **Jiasen Yang**, and Petros Drineas. Randomized iterative algorithms for Fisher discriminant analysis. In *Proceedings of the 35th Conference on Uncertainty in Artificial Intelligence (UAI)*, 2019. (Oral presentation)

Jiasen Yang, Vinayak Rao, and Jennifer Neville. A Stein–Papangelou goodness-of-fit test for point processes. In *Proceedings of the 22nd International Conference on Artificial Intelligence and Statistics (AISTATS)*, 2019. (Oral presentation)

Agniva Chowdhury*, **Jiasen Yang***, and Petros Drineas. Structural conditions for projection-cost preservation via randomized matrix multiplication. *Linear Algebra and its Applications*, 573, 144–165, 2019. (* Equal contribution)

Jiasen Yang, Qiang Liu, Vinayak Rao, and Jennifer Neville. Goodness-of-fit testing for discrete distributions via Stein discrepancy. In *Proceedings of the 35th International Conference on Machine Learning (ICML)*, 2018.

Agniva Chowdhury, **Jiasen Yang**, and Petros Drineas. An iterative, sketching-based framework for ridge regression. In *Proceedings of the 35th International Conference on Machine Learning (ICML)*, 2018.

Jiasen Yang, Vinayak Rao, and Jennifer Neville. Decoupling homophily and reciprocity with latent space network models. In *Proceedings of the 33rd Conference on Uncertainty in Artificial Intelligence (UAI)*, 2017. (Plenary presentation)

Jiasen Yang, Bruno Ribeiro, and Jennifer Neville. Stochastic gradient descent for relational logistic regression via partial network crawls. In *Proceedings of the 7th International Workshop on Statistical Relational AI (StarAI)*, 2017. (Spotlight presentation)

Jiasen Yang, Bruno Ribeiro, and Jennifer Neville. Should we be confident in peer effects estimated from partial crawls of social networks? In *Proceedings of the 11th International AAAI Conference on Web and Social Media (ICWSM)*, 2017.

Honors and Awards

Fellowships and awards

- Bilsland Dissertation Fellowship — *Purdue University* — 2018
- Outstanding Bachelor's Thesis (Top 5%) — *Univ. Sci. & Tech. China* — 2013

Travel awards

- International Conference on Machine Learning — *Stockholm, Sweden* — 2018
- Conference on Uncertainty in Artificial Intelligence — *Sydney, Australia* — 2017
- International AAAI Conference on Web and Social Media — *Montreal, Canada* — 2017
- NSF-CBMS Conference on Topological Data Analysis — *Austin, TX* — 2016
- Amazon Graduate Research Symposium — *Seattle, WA* — 2015

Presentations

Oral presentations

- 35th International Conference on Machine Learning (ICML) — Jul. 2018
  Goodness-of-fit testing for discrete distributions via Stein discrepancy.
- Purdue University Numerical Linear Algebra Group (PUNLAG) Seminar — Apr. 2018
  Goodness-of-fit testing for un-normalized probability distributions.
- 33rd Conference on Uncertainty in Artificial Intelligence (UAI) — Aug. 2017
  Decoupling homophily and reciprocity with latent space network models.
- 7th International Workshop on Statistical Relational AI (StarAI) — Aug. 2017
  Stochastic gradient descent for relational logistic regression via partial network crawls.
- Purdue Statistics Graduate Student Seminar — Mar. 2016
  Exchangeable random graphs, graph limits, and graphons.

Poster presentations

- 9th International Purdue Symposium on Statistics — Jun. 2018
  Goodness-of-fit testing for discrete distributions via Stein discrepancy.
- 11th International AAAI Conference on Web and Social Media (ICWSM) — May 2017
  Should we be confident in peer effects estimated from partial crawls of social networks?
- 3rd Amazon Graduate Research Symposium — Dec. 2015
  Learning relational dependency networks from random walk crawls of large-scale networks.

Teaching Experience

Instructor

- Introduction to Probability Models (STAT 225) — Fall 2014, Spring 2015

Teaching assistant

- Statistics and Society (STAT 113) — Spring 2014
- Elementary Statistical Methods (STAT 301) — Fall 2013, Spring 2014

Professional Service

Coordinator of Purdue Machine Learning and Applications Seminar — Fall 2015

Conference reviewing/program committees

- International Conference on Machine Learning (ICML) — 2017–2019
- Neural Information Processing Systems (NIPS) — 2017–2019
- Artificial Intelligence and Statistics (AISTATS) — 2019
- Uncertainty in Artificial Intelligence (UAI) — 2019
- NIPS Workshop on Relational Representation Learning — 2018

Journal reviewing

- IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI) — 2017–2019
- Journal of Artificial Intelligence Research (JAIR) — 2019
- Machine Learning Journal (MLJ) — 2018
- SIAM Journal on Scientific Computing (SISC) — 2018
- Applied and Computational Harmonic Analysis (ACHA) — 2018

Technical Skills

Programming languages

- Python, R, MATLAB, C/C++, SQL, Mathematica, SAS, HTML, LaTeX