Hang Deng

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Contact

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Research Interests

High-dimensional Statistics, Central Limit Theorem, Shape Constrained Regression, Nonparametrics, Bootstrap methods, Statistical Machine Learning, and Neural Network Overparameterization

Education

Rutgers University, New Brunswick, NJ
Ph.D. candidate, Statistics
Advisor: Prof. Cun-Hui Zhang
Expected to graduate in May 2021

Rutgers University, New Brunswick, NJ
M.Sc. Statistics, *Jan. 2017*

Fudan University, Shanghai, China
B.Sc. Mathematics and Applied Mathematics, *June 2015*

Papers & Technical reports

- **Deng, Hang**. "Slightly conservative bootstrap for maxima of sums". Submitted. Available at *arXiv:2007.15877* (2020).
- **Deng, Hang**, Qiyang Han, and Bodhisattva Sen. "Inference for local parameters in convexity constrained models." Submitted. Available at *arXiv:2006.10264* (2020).
- **Deng, Hang**, Qiyang Han, and Cun-Hui Zhang. "Confidence intervals for multiple isotonic regression and other monotone models". Submitted to ***Annals of Statistics***, revision invited and submitted. Available at *arXiv:2001.07064* (2020).
- **Deng, Hang**, and Cun-Hui Zhang. "Isotonic regression in multi-dimensional spaces and graphs". Accepted by ***Annals of Statistics***, to appear. Available at *arXiv:1812.08944* (2018).
- **Deng, Hang**, and Cun-Hui Zhang. "Beyond Gaussian approximation: Bootstrap for maxima of sums of independent random vectors." Accepted by ***Annals of Statistics***, to appear. Available at *arXiv:1705.09528* (2017).
- Abdulla, G. M., **H. Deng**, B. Soper, J. Nagrad, and M. Nygard. "Filling the gaps: using a static data source to create a rich temporal dataset". No. LLNL-CONF-752118. Lawrence Livermore National Lab.(LLNL), Livermore, CA, (2018).
  Technical report at *Second ISC HPC Applications in Precision Medicine Workshop, 2018*

Research Experiences

Lawrence Livermore National Laboratory, CA *07/2017 - 09/2017*
NSF Graduate Intern at Institute for Scientific Computing Research
- Supported by **NSF-Mathematical Sciences Graduate Internship Program.**
- Collaborated with the Cancer Registry of Norway to construct a personalized cervical cancer screening policy for women in Norway.
- Proposed a deep learning framework which builds a long short-term memory (LSTM) neural network for each woman using her survey and screening test data and trains all neural nets with transfer learning.
- See my story on SIAM News or the NSF-Mathematical Sciences Graduate Internship Program website.

Honors & Awards

- **Oberwolfach Leibniz Graduate Student**, Mathematical Research Institute of Oberwolfach, Germany, 2018
- **Best Ph.D Qualifying Exam Performance**, Department of Statistics, Rutgers University, 2016. *Awarded for the highest score in qualifying exam.*
- **Conference Travel Award**, Rutgers University, 2018
- **TA/GA Professional Development Fund Award**, Rutgers University, 2017-2018
- **Outstanding Graduate of Fudan University**, Fudan University, 2015.
- **Scholarship for Outstanding Students at Fudan University**, Fudan University, 2012-2014.

Selected Talks

- Contributed Talk. JSM, online, "Confidence Intervals for Multiple Isotonic Regression and Other Monotone Models", *August 2020*
- Invited Talk. JSM, Denver, CO, "Isotonic Regression in Multi-Dimensional Spaces and Graphs", *July 2019*
- Invited Talk. International Workshop on Perspectives on High dimensional Data Analysis, Uppsala, Sweden. "Beyond Gaussian Approximation: Bootstrap for Maxima of Sums of Independent Random Vectors", *June 2019*
- PhD Student Talk. Statistical Inference for Structured High-dimensional Models Workshop, MFO, Germany, "Beyond Gaussian Approximation: Bootstrap for Maxima of Sums of Independent Random Vectors", *March 2018*
- Seminar Talk. Lawrence Livermore National Lab, Livermore, CA, "Feature Extraction from Patients Surveys to Facilitate Learning from Cervical Screening Data", *Sept. 2017*

Teaching

Rutgers University, New Brunswick, NJ

Instructor

- STAT 695: Linear Algebra and Multivariable Calculus Review (Fall 2020)

Teaching Assistant

- STAT 486: Computing and Graphics in Applied Statistics (Spring 2020)
- STAT 285: Introductory Statistics for Business (Fall 2019)
- FSRM 591: Algorithm Trading & Portfolio Management (Fall 2018)
- STAT 590: Design of Experiments (Fall 2018)
- STAT 401: Basic Statistics for Research (Fall 2016, Spring 2017)
- STAT 211: Statistics I (Fall 2016, Spring 2017).

Academic Services

Reviewer for *Annals of Statistics*, *Probability Theory and Related Fields*, and *Statistical Sciences*.

Skills

R, C++, Matlab, Python, Matlab, LaTeX, SQL