JINGYI ZHANG

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EDUCATION

University of Georgia, Department of Statistics, Athens, Georgia, USA

- Ph.D. Candidate in Statistics *Expected graduation date: May 2020*

Wuhan University, Department of Mathematics Statistics, Wuhan, Hubei, China

- Master of Statistics *September 2011 - June 2013*
- Bachelor of Statistics *September 2007 - June 2011*

RESEARCH INTEREST

Decentralized computing; Statistical data fusion; Dimension reduction; Non/Semi-parametric regression; Subsampling methods in big data; Large-scale optimal transport problems.

PRESENTATIONS

Invited presentation

Machine learning for detecting coronary heart disease. Jul 2019
Beijing hospital, Beijing, China.

Applications of statistics in AI medical research. Jul 2019
Tsinghua University, Beijing, China.

Parameter fusion method for scattered heterogeneous data and its application in medical researches.
Nankai University, Tianjin, China. Jun 2019

Parameter fusion method for scattered heterogeneous data. May 2019
Institute of Optics and Electronics Chinese Academy of Science, Beijing, China.

Decentralized data fusion with privacy concerns. Dec 2018
Fudan University, Shanghai, China.

A statistical method for decentralized data fusion. Aug 2018
Bio-sensing and instrumentation lab, University of Georgia, Athens, GA, USA.

Poster representation

UGA-Clemson Joint Seminar. Mar 2018
Decentralized computing method with data privacy. University of Georgia, Athens, GA, USA

Georgia Statistics Day. Oct 2018
A statistical method for decentralized data fusion. University of Georgia, Athens, GA, USA

PUBLICATIONS

Published

1. **Jingyi Zhang**, Honghe Jin, Ye Wang, Xiaoxiao Sun, Ping Ma, and Wenxuan Zhong. Smoothing Spline ANOVA Models and Their Applications in Complex and Massive Datasets. Topics in Splines and Applications. InTechOpen, 2018.

2. Cheng Meng, Yuan Ke, **Jingyi Zhang**, Mengrui Zhang, Wenxuan Zhong, and Ping Ma. Large-scale optimal transport map estimation using projection pursuit. NeurIPS 2019, in process.
3. Cheng Meng, Xinlian Zhang, **Jingyi Zhang**, Wenxuan Zhong, and Ping Ma. More efficient computation of smoothing splines via space-filling basis selection. Biometrika, in process.

Under review

1. **Jingyi Zhang**, Wenxuan Zhong, and Ping Ma. Subspace fusion for heterogeneous scattered data. Submitted to the International Conference on Machine Learning (2020).
2. **Jingyi Zhang**, Huolan Zhu, Yongkai Chen, Chenguang Yang, Cheng Meng, Huimin Cheng, Yi Li, Wenxuan Zhong and Fang Wang. Echocardiography based screening for coronary heart disease using an ensemble machine learning approach. Submitted to JACC: Cardiovascular imaging.
3. Cheng Meng, **Jingyi Zhang**, Jinyang Chen, Wenxuan Zhong, and Ping Ma. An optimal transport approach for selecting a representative subsample. Submitted to the International Conference on Machine Learning (2020).
4. Cheng Meng, Yuan Ke, **Jingyi Zhang**, Wenxuan Zhong, and Ping Ma. Towards $\sqrt{n}$-consistent estimation of Wasserstein distances with smoothed Monge map. Submitted to the International Conference on Machine Learning (2020).
5. Shangpeng Sun, Yu Jiang, Cheng Meng, **Jingyi Zhang**, Ping Ma, and Changying Li. Automated plant node detection using terrestrial LiDAR data under field conditions. American Society of Agricultural & Biological Engineers Annual International Meeting, under review.
6. Prahatha Venkatraman, Ishara Mills-Henry, Karthik Ramaswamy Padmanabhan, Pete Pascuzzi, Menna Hassan, **Jingyi Zhang**, Xinlian Zhang, Ping Ma, John Dowling, Chi Pui Pang, Mingzhi Zhang, and Yuk Fai Leung. Rods contribute to visual behaviour in larval zebrafish. Investigative Ophthalmology & Visual Science, under review.

In preparation

1. Mengrui Zhang, **Jingyi Zhang**, Jennifer L. Gay, and Ping Ma. Large-scale global analysis of human dynamics using non-parametric regression. In preparation.
2. Nan Zhang, **Jingyi Zhang**, Cheng Meng, and Ping Ma. Double sketching for large-scale non-parametric regression. In preparation.
3. Cheng Meng, **Jingyi Zhang**, Wenxuan Zhong, and Ping Ma. Towards adaptive smoothing splines using optimal transport. In preparation.

RESEARCH COLLABORATION

- *Video & image processing, echocardiogram data analysis, coronary heart disease prediction*
  Peking University First Hospital, Beijing, China Sep 2019-Present
- *Echocardiogram data analysis, coronary heart disease prediction*
  Beijing Hospital, Beijing, China May 2019-Present
- *Plant node detection with LiDAR data, and analysing flowering data*
  Bio-Sensing and Instrumentation Lab, University of Georgia Jul 2018-Present
- *Human dynamics, GPS data analysis*
  Institute of Gerontology, University of Georgia Aug 2018-Present
- *Large-scale non-parametric regression*
  Professor Zhang Laboratory, Fudan University Dec 2018-Present

- *Software package*
  Professor Zeng Laboratory, Auburn University Jul 2019-Present

TEACHING ACTIVITIES

Teaching assistant

- STAT 2000 Introductory Statistics Fall 2015 & Spring 2018
- STAT 4290 Nonparametrics Spring 2016
- STAT 6360 Statistics Programming Summer 2016
- STAT 6810 Probability Distribution Fall 2016 & Fall 2017
- STAT 6520 Mathematical Statistics II Spring 2017
- STAT 8270 Spatial Statistics Spring 2017 & Spring 2019
- STAT 8330 Advanced applying computing Fall 2018
- MSIT 3000 Statistical Analysis Summer 2017
- Statistics Bootcamp Summer 2017 & Summer 2018

AWARDS & HONORS

- **Travel Grant**, The 2019 Joint Statistical Meetings May 2019
  University of Georgia
- **Outstanding TA Award** Mar 2017

PROFESSIONAL ACTIVITIES

Review for journal
Annals of Statistics, Statistica Sinica, and Journal of the American Statistical Association
Organization membership
American Statistical Association (ASA) 2015-Present

SOFTWARES & COMPUTING SKILLS

- **Python package development**

  PPMM (https://github.com/joyeecat/PPMM):
  Python3 implementation of the paper [Large-scale optimal transport map estimation using projection pursuit].

- **Programming**

  R, Python, SAS, Mablab, Tensorflow