Curriculum Vitae

Jinxin Xia

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Education

2020 Winter	M.A. in Mathematical Statistics Wake Forest University, Winston-Salem, NC
2018	B.S. in Statistics, Finance (Dual Degree program with Sichuan University) Colorado State University, Fort Collins, CO
2016	B.M. in Labor and Social Security Sichuan University, Chengdu, China

Research

May 2019 - Present — Genotype quality of genetic markers, batch effects for microbiome data
Department of Biostatistics and Data Science, Wake Forest University
Supervisor: Dr. Carl Langefeld
Contributions:

- Wrote and tested Python and R codes in Linux high performance computer cluster environment
- Proved that centered log transformation is not one to one

May 2019 - Present — Computation Efficiency, Algorithm
Department of Computer Science, Wake Forest University
Supervisor: Dr. Grey Ballard
Contributions:

- Optimized a clustering algorithm for Cache efficiency by improving the Cache complexity by $O(\sqrt{n})$
- Discovered fast matrix multiplication algorithms using Gauss Newton and trust region optimization methods

May 2019 - Present — Optimization methods for large-scale problems in computational genomics
Department of Mathematics and Statistics, Wake Forest University
Supervisor: Dr. Jennifer Erway (NSF IIS-1741264)
Contributions:

- Executed computation cost analysis and proofed two different compact formulated optimization methods
- Implemented the less computational expensive one in MATLAB
- Found criteria of turning the BFGS optimization algorithm to the Limited-memory BFGS

Teaching

May 2019 - Present — Teaching Assistant, Grader
Department of Mathematics and Statistics, Wake Forest University
Worked as a teaching assistant in introductory math courses, Numerical Methods, and Numerical Linear Algebra. I assisted with labs, proctored exams, and sometimes presented extra credit problems for the classes.

Jan 2019 - Present — Math and Statistics Tutor
Department of Mathematics and Statistics, Wake Forest University
Worked as a hourly tutor, promoted to lead tutor in Spring 2020, at the Math and Statistics center for all level math and statistics courses.

Presentations

- Jinxin Xia. *Finding Optimization methods for large scale problem.* Association for Women in Mathematics Wake Forest Chapter Brown Bag Seminar. Oct. 18, 2019
- Jinxin Xia. *Batch effects for microbiome data debrief.* Langefeld's Lab Meeting. Aug. 15, 2019
- Jinxin Xia. *Fast Matrix Multiplication Challenges and Approaches.* Ballard Research Group Summer Research Report Meeting. Aug. 5, 2019

Technical Skills

Software & Programming
R, Linux shell, Python, MATLAB, Git, Conda, LaTeX, C/C++(Basic knowledge)

Advanced Courses

Statistics
Generalized Linear Models, Network, Stochastic Processes, Statistical Inference
Mathematics
Real Analysis, Measure Theory, Topics in Applied Mathematics: Numerical Optimization, Numerical Linear Algebra

Honors and awards

- Wake Forest University Partial Scholarship (2019)
- Global Association of Risk Professional Research Fellowship (2017)
- IMA Financial Group, Inc. Scholarship at Colorado State University (2016)
- First Scholarship at Sichuan University (2013)
- Shaanxi Province High School Math and Biology Competition Third Prize (2011)