

Hangcen Zou

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EDUCATION

Washington University in St. Louis

Ph.D. in Statistics

St. Louis, MO

Expected Graduation: May 2027

Washington University in St. Louis

Bachelor of Arts

St. Louis, MO

Graduated in May 2021

Majors: Mathematics, Finance Minor: Computer Science

Cumulative GPA: 3.95/4.00

RESEARCH INTERESTS

Spatial statistics, high-dimensional data, time series, change points, applications in neuroimaging and brain connectivity

RESEARCH EXPERIENCE

Laplace Approximation on Irregular Lattices Using Combinatorial Optimization Algorithm

Washington University in St. Louis, Department of Statistics and Data Science

St. Louis, MO

September 2023 – Present

Advisor: Debashis Mondal

Adaptive MOSUM: Inference for Multiscale Change Points in High-Dimensional Time Series

Washington University in St. Louis, Department of Statistics and Data Science

St. Louis, MO

December 2022 – Present

Advisor: Likai Chen Collaborators: Jiaqi Li, Michel F. C. Haddad

Network-Level Automated Sleep Stage Change Detection for fMRI Baby Connectome Analysis

Washington University School of Medicine in St. Louis, Mallinckrodt Institute of Radiology

St. Louis, MO

December 2022 – Present

Advisor: Muriah D. Wheelock Collaborators: Jiaqi Li, Yumiao Lei

Volatility Estimation on High Frequency Data with Wavelet Shrinkage and Threshold Variation

Washington University in St. Louis, Department of Mathematics and Statistics

St. Louis, MO

February 2020 – May 2021

Advisor: José E. Figueroa-López

- Presented at the 2020 Midstates Consortium for Math and Science Undergraduate Research Symposium

INTERNSHIP EXPERIENCE

Yidu Technology Inc.

Data Scientist Intern

Shanghai, China

Jan 2022 – June 2022

- Retrieved substantial clinical data from a database containing more than 2.2 billion longitudinal healthcare records
- Designed and implemented logical frameworks to extract diagnosis, drug usage, and disease progression information about psoriasis, ankylosing spondylitis, and hypertrophic cardiomyopathy
- Automated the procedure of normalizing and classifying hospital division information by applying PrestoSQL and HQL
- Utilized network meta-analysis method to investigate recent publications about the PD-1/PD-L1 pathway in cancer immunotherapy and draw comparisons among potencies of different inhibitors

China Daas

Data Analyst Intern

Beijing, China

May 2019 – June 2019

- Updated weekly data to an industrial and commercial database with more than 60 million companies on record
- Streamlined the trademark-status identification process from scratch by consulting the specification and taking massive samples from competing products
- Co-developed new algorithms using PostgreSQL and Python to organize branch relationships, clean up invalid contact information, and standardize address information
- Conducted daily query work for prompt product support and weekly project reports for tracking work progress

Numerical Algorithms Group

Extern

Chicago, IL

March 2019

- Resolved mathematical optimization puzzles in finance with Python and advanced mathematical functions in NAG Library
- Shadowed the Chief Executive Officer as he managed internal managerial affairs

LEADERSHIP EXPERIENCE

Chinese Students and Scholars Association

St. Louis, MO

President, Event Chair

August 2022 – Present

- Oversee a team of 58 members, managing operations including event planning, marketing, outreach, and fundraising activities
- Initiate official accounts establishment, online repository creation, organization rebranding, and constitution revising, resulting in enhanced digital presence and alignment with updated objectives
- Program online campus tours, kick-off gatherings, and a student handbook for over 1,000 incoming Chinese students, ensuring a smooth transition and a positive onboarding experience
- Execute Mid-autumn and Spring festive celebrations, featuring reception, performances, and contests, consistently attracting more than 500 audience, and improving the organization's visibility and community engagement
- Collaborate with the Graduate Center and Association of Graduate Engineering Students to promote Chinese through events such as Chinese calligraphy try-outs, Chinese tea tastings, and traditional Chinese music concerts

WUSauce

St. Louis, MO

Head Choreographer, Training Chair, Treasurer

January 2018 – May 2021

- Managed team affairs related to choreographing, training, performing, and auditions
- Taught eight new team members salsa dance moves and trained the full team on dance skills and showmanship twice a week
- Planned a full-team trip to Chicago Salsa & Bachata Festival at which the team performed and took lessons from professionals
- Co-organized an annual showcase with 10 dance teams and more than 200 audience members

TEACHING EXPERIENCE

Washington University in St. Louis

St. Louis, MO

Assistant to Instructor for Math 3200: Elementary to Intermediate Statistics and Data Analysis

August 2023 – Present

Leader for Calculus II Peer-Led Team Learning Program

August 2018 – December 2019

Teaching Assistant for CSE 247: Data Structures and Algorithms

January 2019 – May 2019

Language Ambassador for Partners in East St. Louis

August 2018 – May 2019

Johns Hopkins Center for Talented Youth

Bristol, RI

Teaching Assistant for The Mathematics of Money

July 2019 – August 2019

AWARDS, HONORS & SCHOLARSHIPS

- **University Scholarship** August 2022 – Present
Washington University in St. Louis
- **Freiwald Scholarship** February 2020 – May 2021
Scholarship for undergraduates to carry out research in areas with substantial mathematical content
- **Honors Program in Statistics** August 2017 – May 2021
Undergraduate honors program consisting of a challenging four-year curriculum and an honors thesis
- **Magna Cum Laude** May 2021
Undergraduate collegewide Latin Honors
- **Highest Distinction in Mathematics** May 2021
Undergraduate department award
- **Martin Silverstein Award in Mathematics** May 2021
Undergraduate award for students with strengths in probability and statistics
- **Mathematics Mentor Award** May 2021
Undergraduate award for students with exceptional contribution as mentors
- **Brian Blank Award in Mathematics** May 2020
Undergraduate award for distinguished juniors majoring mathematics and statistics
- **Dean's List**
Undergraduate collegewide award (Spring 2018, Fall 2018, Spring 2019, Fall 2019, Fall 2020, Spring 2021)

SKILLS

- Computer: proficient in R, MATLAB, PrestoSQL, Java, Python, HTML, JavaScript, LaTeX, and Microsoft Office Software
- Language: native proficiency in Chinese; knowledge of Spanish