

Hangcen Zou

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PROFESSIONAL PROFILE

Third-year Ph.D. student with a focus in Statistical Modeling and Computational Methods. Presented talk on multiscale change point detection in Spatial Time Series at the 2024 Joint Statistical Meetings (largest global statistical conference). Two corporate internship experiences in machine learning and co-developed new algorithms using Python and SQL. Earned multiple awards for excellent scholarship in statistics and mathematics. Completing dissertation focused on modeling in R using real-world data: Gaussian Markov random field for irregularly sampled spatial data with large scale computations. President of graduate student organization and founder/manager of Statistics Department seminar series.

EDUCATION

Washington University in St. Louis

Ph.D. in Statistics

M.A. in Statistics (cumulative GPA: 4.00/4.00)

B.A. (majors: Mathematics, Finance; minor: Computer Science; cumulative GPA: 3.95/4.00)

St. Louis, United States

Expected Graduation: May 2027

Graduated in May 2024

Graduated in May 2021

RESEARCH INTERESTS

High-dimensional data, time series, spatial statistics, statistical modeling, computational methods, and change points detection

RESEARCH EXPERIENCE

Gaussian Markov Random Fields for Irregularly Sampled Spatial Data with Large Scale Computations

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

September 2023 – Present

Advisor: Debashis Mondal

Adaptive MOSUM: Testing for Multiscale Change Points in Spatial Time Series

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

December 2022 – Present

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

- Presented at the 2024 Joint Statistical Meetings

Network-Level Automated Sleep Stage Change Detection for Brain fMRI Data

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

December 2022 – Present

Advisor: Muriah D. Wheelock Collaborator: Jiaqi Li

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

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

February 2020 – May 2021

Advisor: José E. Figueroa-López

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

INTERNSHIP EXPERIENCE

Yidu Technology Inc.

Shanghai, China

Data Scientist Intern

January 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
- Used 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

LEADERSHIP EXPERIENCE

Chinese Students and Scholars Association

St. Louis, United States

President, Event Chair

August 2022 – May 2024

- Oversaw a team of 58 members, managing operations including event planning, marketing, outreach, and fundraising activities
- Initiated official accounts establishment, online repository creation, organization rebranding, and constitution revising, resulting in enhanced digital presence and alignment with updated objectives
- Executed Mid-autumn and Spring festive celebrations, featuring reception, performances, and contests, consistently attracting more than 500 audience, promoting Chinese culture, and improving the organization's visibility and community engagement

WUSauce

St. Louis, United States

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
- Co-organized an annual showcase with 10 dance teams and more than 200 audience members

AWARDS, HONORS & SCHOLARSHIPS

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

SKILLS

- Computer: R, Python (pandas, sklearn, TensorFlow), SQL, MATLAB, Java, HTML, JavaScript, and Microsoft Office Software
- Language: English and Mandarin