Jiazhi He

Ph.D. in Statistics, University of Pittsburgh
+1-412-330-9586 jiazhi.he@pitt.edu /jiazhi-he-0b9b381a6 /He-jiazhi /Homepage

Research Interests

I have broad research interests in methodology and theory in high-dimensional statistical inference, nonparametric density estimation and statistical machine learning, to establish reliable, powerful, and interpretable solutions to wide real-world problems.

Education

University of Pittsburgh | Pittsburgh, PA, US — Sep 2023 - Present

- Ph.D. in Statistics, Department of Statistics.
- Relevant CourseWork: Probability Theory, Applied Statistical Methods, Theory of Statistics, Bayesian Analysis.

University of Science and Technology of China | Anhui, China — Sep 2019 - Jul 2023

- Bachelor of Science in Mathematics and Applied Mathematics, School of Mathematical Science
- Relevent Coursework: Mathematical Statistics, Regression Analysis, Functional Analysis, Real Analysis, Linear Algebra, Multivariate Analysis A, Applied Stochastic Processes, Optimization Algorithms(Graduate Course), Operations Research, Linear Regression Models(Graduate Course), Data Structures and Database, Comupter programming A, Convex Optimization, Introduction to Machine Learning, Nonparametric Statistics(Graduate Course), Differential Equations I, etc.

Skills

Programming	C, Python, R, LaTeX, Mathematica, Matlab
Language	Mandarin (Native Speaker), English (Fluent), German (College German Band 4)
GRE General Test	324 = Verbal (155)+Quantitative (169)+ Analytical Writing (3.5)

Projects

Optimization

Optimization Algorithms Course Project | Python, Ortools, Gurobi — May 2022

Advisor: Prof. Zhouwang Yang — Project Link

- Established the model of an Assignment Problem and obtained the optimal solution using Ortools on Python.
- Modeled and solved a Traveling Salesman Problem based on optimization software Gurobi and implemented Branch&Cut algorithms; Compared the effect of Lazy Cut and User Cut on the solution rate.

Operations Research Course Project | Python — Dec 2021

Advisor: Prof. Zhouwang Yang — Project Link

- Developed a fast algorithm for Dynamic Programming and tested it on Knapsack problem and Equipment Replacement problem, achieving right results at a high speed.
- Solved unconstrained optimization problem, using Newton Method and inexact one-dimensional line search on Wolfe-Powell criterion.

Machine Learning

Machine learning Course Project | Python, Bert — May 2021 - June 2021

Advisor: Prof. Jie Wang — Project Link

- Implemented a classifier to predict the stars (from 1 to 5) based on the Amazon customers comments (with roughly 100000 samples) and got a high fscore on the test set.
- Implemented both the forward and backward processes of CNN from scratch (Using numpy).

Research Experience

Latent Multi-Armed Bandits Problem — Sep 2022 - Feb 2023

Advisor: Cong Shen, Department of Electrical and Computer Engineering, University of Virginia

- Considered the rigorous mathematical analysis of algorithms for bandits problems.

- Learned to solve the problem of learning a near-optimal policy in Latent Multi-Armed Bandits by using techniques from experiment design.

Evaluation of personal health status in cloud medical and big data environment Jan 2022 - July 2022

Advisor: Jie Wu, Department of Management Science, University of Science and Technology of China

- Proposed a health index model based on LASSO regression and personal credit score card model.
- Compared with more complex machine learning models such as random forests and found that prediction accuracy of the LASSO regression model is better on the large data set of physical examination.

Scholarships & Awards

- Outstanding Student Scholarship, Bronze Award, USTC (Top 20%) 2022
- Outstanding Volunteer Award, USTC 2021
- Outstanding Academic Progress Scholarship, USTC 2020
- Outstanding Student Scholarship, Silver Award, USTC (Top 10%) 2020
- Excellent Summer Social Practice Award, USTC 2020
- Outstanding Freshmen Scholarship, Bronze Award, USTC (Top 20%) 2019
- China Senior High School Mathematics Competition, Second Prize in Anhui Province 2017

Teaching Experience

Teaching Assistant For Applied Nonparametric Statistics (STAT 1201/2200) Fall 2023

Instructor: Dr. Yeon-Jung Seo, Department of Statistics, Pitt

Teaching Assistant For Statistics in the Modern World (STAT 0800) Fall 2023

Instructor: Ruth Mihalyi, Department of Statistics, Pitt

Teaching Assistant For Mathematical Statistics (MATH3005) Fall 2022

Instructor: Dr. Xiaohong Lan, School of Mathematical Sciences, USTC

Teaching Assistant For Linear Algebra B1 (MATH1009) Spring 2022

Instructor: Dr. Jue Le , School of Mathematical Sciences, USTC

Activities

- Member at Liaison Department of School Student Union, USTC. Sep 2019 - June 2021
- Built a team and provided academic support for high school students. June 2020 - Sep 2020