YUXIA DING

Email: dingyx05@mail.ustc.edu.cn **Homepage:** yuxiading.github.io

EDUCATION

University of Science and Technology of China 2023 - 2027(Expected)

- **School of Managentment**
- Major: **Statistics**
- GPA: **3.64/4.3**
- Rank : **6/36**

Course work: **Mathematical Statistics (91)**, **Mathematical Analysis I (90)**, **Linear Algebra I (87)**, **Convex Optimization (99)**, **Regression Analysis (96)**

SCHOLARSHIPS AND AWARDS

Outstanding Student Scholarship (Gold Award), USTC 2024

Freshman Scholarship, USTC 2023

Outstanding Student Association Leader, USTC 2025

Chinese Mathematics Competitions for College Students (Provincial Second Prize) 2024

National Mathematical Olympiad in Senior (Provincial First Prize) 2022

PROJECTS

Construction and Analysis of a Five-Factor Personality Assessment Model for Large Language Models (LLMs)

- Project Description: Research on the personality traits of AI agents, aiming to quantitatively evaluate the performance of different LLMs (such as Deepseek-V3 and Qwen 2.5) in simulating human 'Big Five' personality traits.
- My contributions:
  - Model Construction: Independently designed and developed a multi-dimensional mathematical evaluation framework. By consulting psychology literature to review psychology scales (such as NEO-PI-R) and related literature, I elicited personality-oriented text from the models and quantified the results.
  - Data Analysis: Employed Python and statistical analysis methods to process and analyze thousands of model-generated data entries, revealing significant differences in model performance across dimensions such as 'Openness' and 'Conscientiousness'.
  - Project Outcomes: Successfully quantified the personality profiles of mainstream LLMs, providing a benchmark reference and methodological support for subsequent research on Agent behavioral consistency.

Financial Time Series Volatility Breakpoint Detection under a Bayesian Framework (Course Project)

- Project Description: Proposed and validated a Bayesian inference framework using the Metropolis-Hastings algorithm to accurately identify change points and estimate regime-specific volatility in financial time series facing external shocks.

- My work:
  - Algorithm Derivation and Model Construction: Formulated the Bayesian statistical model framework and derived the joint likelihood function integrating structural breaks. Designed a Random Walk Metropolis-Hastings proposal distribution and acceptance probability logic for both discrete change points and continuous volatility parameters.
  - Core Experimental Design: Led the architectural design for simulation validation and empirical analysis. Established testing benchmarks to compare prior distributions (Uniform, Inverse-Gamma, Exponential), evaluate multi-chain convergence under different initial values, and assess proposal step-size efficiency.
  - Team Collaboration and Result Interpretation: Actively participated in logic structuring and debugging discussions for the R-based MCMC sampler. Analyzed the empirical results of the 2008 S&P 500 index, successfully identifying the market regime shift exactly one trading day prior to the Lehman Brothers bankruptcy. Provided quantitative conclusions based on Effective Sample Size (ESS) metrics and posterior distribution visualizations.

SKILLS

Data Analysis and Modeling Skills Using R and Python

- Data processing: Proficient in R and Python to clean, transform, and preprocess million-scale datasets.
- Data insights: Expertise in performing exploratory data analysis, using ggplot2 and Matplotlib for multi-dimensional data visualization to uncover patterns and correlations within the data.
- Modeling practice: Ability to combine statistical tests, regression analysis, machine learning, and other methods to extract valuable insights from massive amounts of data and build predictive models.

Other programming languages: C language, Latex

Languages

CET-4: 589, CET-6: 569, TOFEL: 102 (Reading: 29, Listening: 21, Speaking: 27, Writing: 25)

ACTIVITIES

Teaching Assistant, Practical Statistical Software, USTC Spring 2026

President of Student and Alumni Charity Club, USTC 2024.6-2025.6

Hobbies: Playing basketball, running, photography, urban transportation

PERSONAL QUALITIES

- Optimistic and cheerful;
- Willing to communicate with others, with a strong sense of teamwork;
- Good attitude and strong ability to withstand pressure;
- Proactive, eager to learn new technologies and good at learning;
- Strong sense of responsibility, down-to-earth and conscientious in work.