

Muyao (Jerry) Kong

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EDUCATION

New York University

Double Major in Computer Science and Math (intended)

Relevant Coursework: Basic Algorithm, Linear Algebra, Discrete Math, Computer System Organization, Data Structures, Math for Econ I and II, Analytical Statistics, Urban Economics

High School Attached to Shandong Normal University

GPA: 4.01 Ranking: 5%

New York, NY

Expected May 2027

Jinan, China

Graduated June 2023

TECHNICAL SKILLS

Programming Languages: Proficient - Java, Python, JavaScript, Familiar - C, Assembly Language

Markup Languages: Proficient - LaTeX, HTML, CSS

Database Management Systems: Familiar - MySQL

Other Libraries: Proficient - Pandas, NumPy, Familiar - PyMySQL, Statsmodel, Matplotlib

WORK EXPERIENCE

National Supercomputing Center

Algorithm and Data Analyst Intern

Jinan, China

Jun 2024 - Aug 2024

- **Cleaned** time series device data; constructed data anomaly detection and localization algorithms to locate and process abnormal data data using **Huber Regressor** in **robust regression**.
- Built **ICC (Intraclass Correlation)** data consistency check algorithms, made judgment of consistency on the historical data of multiple related devices.
- Built machine learning **ARIMA** (Autoregressive Integrated Moving Average) model, used the constructed ARIMA model to forecast the **time series** device data.
- Wrote Python automation script for timed processing of device data, handled timed database read/write using **PyMySQL**, and processed the retrieved device data from MySQL database.

China Merchants Securities Co.

Wealth Management Consultant Intern

Jinan, China

Jul 2024 – Aug 2024

- Learned professional knowledge of business and finance, such as brokerage business, capital intermediary business, as well as professional concepts such as structured deposit, risk level, etc.
- Examined the operating principles of the securities market, investigated the management structure, service processes and operating models of securities companies.
- Deep-mined, organized, screened and analyzed public fund data based on **volatility**, **maximum retracement**, **Sharpe ratio**, **downside risk**, etc.

TikTok

Self-employed Internet Influencer

Remote

Jan 2021 – Feb 2024

- Received **over 1.3 million likes**.
- Accumulated a maximum of almost **10,000 followers**.
- Posts have been viewed by **over 3000,000 people**.

RESEARCH & PROJECTS

Time Series Prediction Algorithm

- **Stationarity Analysis:** Assessed time series stationarity using ACF and PACF plots; processed data with non-stationarity by differencing and detrending. Achieved stationarity in roughly 97% cases.
- **Optimized Differencing:** Applied an automated process to select the optimal differencing order, leading to a reduction in model error by 99.64% and enhancing the predictive accuracy.
- **Model Selection:** Optimized ARIMA parameters (p, d, q) using Bayesian Information Criterion (BIC), running extensive iterations to fine-tune predictions.
- **Visualization and Insights:** Produced visualizations based on **Matplotlib** to illustrate autocorrelation and forecast results, enabling clear identification of future trends and critical maintenance periods.

Research: Impact of Economic Land Use and Land Values on Urban Development

- Participated in the seminar led by Professor Philip Almendinger at Cambridge University, researched on Dubai's three major approaches to its water problem.
- Collaborated with peers to deliver a presentation and final report titled *Adapt and Protect: How Four Typical Cities Combat Environmental Challenges*.
- Analyzed the economic and environmental values of Copenhagen's urban planning initiatives, including the "Finger Plan" in transportation, sponge city design, green roofing, and waste recycling strategies.
- Co-authored the paper *How Urban Planning Contributes to Economy and Environment: A Case Study of Copenhagen* with peers, accepted for presentation at the International Conference on Business and Policy Studies and indexed by CPCI.

PUBLICATION

[1] Ding, Y., Huang, H., Kong, M., et al. (2022). *How Urban Planning Contributes to Economy and Environment: A Case Study of Copenhagen*. Applied Economics and Policy Studies. CPCI. (Accepted)

OTHER SKILLS

Languages: Chinese (Mandarin), English, Japanese, Chinese (Cantonese)

Interests: Programming, Math, Economy, Learning Language , Piano