GUANBO QIAO

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EDUCATION BACKGROUND

Nanyang Technological University, Singapore **08/2024 - 07/2025**
Master of Analytics - School of Physical and Mathematical Sciences
Core courses: Operations Research, Financial and Risk Analytics, Advanced Natural Language Processing with Deep Learning, Database Systems, Blockchain Systems, Data Mining, Web Analytics.

Sun Yat-sen University, Guangzhou, China **09/2019 - 06/2023**
Bachelor of Science in Statistics - School of Mathematics
Core Courses: Mathematical Analysis, Probability Theory, Mathematical Statistics, Stochastic Processes, Applied Regression Analysis, Non-parametric Statistics, Survival Analysis, Time Series Analysis, Advanced Language Programming Design (C++).

PUBLICATIONS AND RESEARCH PAPERWORK

Transformer-based Models for Time Series Forecasting: Practical Applications, Model Enhancements and Future Perspectives
- *First Author. Master's Research Project Report, May 2025*
- Conducted a comprehensive evaluation of five Transformer-based models (Vanilla Transformer, Informer, Autoformer, FEDformer, TimesNet) across forecasting, classification, anomaly detection, and imputation tasks.
- Proposed a novel hybrid architecture combining RNN-based trend modeling, adaptive frequency weighting, and multi-scale convolution to improve both long-term dependency modeling and short-term anomaly detection.
- Explored future directions such as wavelet transforms and structure-aware validation metrics to enhance prediction fidelity in time series analysis.

An empirical study on the relationship between growth factors, cluster network and firm performance, *Third Author*
- Published in the fifth issue of Statistics: *Theory and Practice* in 2022
- Based on the theory of enterprise growth and cluster network, this paper takes 399 valid questionnaires from 12 industrial clusters in Henan Province as samples, and uses *Structural Equation Model* to explore the relationship between enterprise growth factors, industrial cluster network and enterprise performance.

Based on the application of improved Smith predictive controller in temperature control of AnGang heating furnace, *Second Author*
- Published in the June 2022 issue of *China Equipment Engineering Journal*
- Aiming at the key problem of long lag time, an improved Smith predictive controller optimization method is proposed in the aspect of temperature control of heating furnace, and MATLAB software is used for simulation. The simulation shows that the temperature control of heating furnace is more stable and the reliability is enhanced.

INTERNSHIPS AND WORK EXPERIENCES

Roland Berger, Audi China E-commerce Strategy Consulting Project, Beijing **02/2024 - 07/2024**
- Provided data support for the project through e-commerce, live-streaming, and offline store sales data analysis.
- Assisted in drafting a phased summary of Audi's e-commerce business integration plan for reporting to Roland Berger's VP, based on integrated analysis results.
- Developed Python, R, and VBA programs to automate data integration and analysis, supporting the team's weekly reporting.

Technology Department, INDUSTRIAL BANK, Guangzhou **02/2022 - 04/2022**
- Combined machine learning algorithms with bank business data characteristics, using data mining methods such as support vector machine (SVM) and classification and regression tree (CART) to analyze user financial behaviors and traits, providing strong support for the department's future digital transformation strategy.
- Participated in the headquarters' market analysis project on future fintech and business trends, and assisted in drafting the report for the banking business and digital transformation strategy seminar.

Technology Center, Anyang Iron & Steel Group CO., LTD. , Anyang **07/2021 - 09/2021**
- Participated in the technical center's business discussion, project research and other work.
- Deeply studied the Smith predictive controller, constructed a mathematical model and optimization algorithm for AnGang's 1780m² heating furnace, and simulated the design in MATLAB with effective results.

COMPUTER SKILLS

- Well-versed in programming languages: R, PyTorch, Python, Tableau, LaTex.
- Proficient in programming languages: Matlab, C++, SQL.
- Fluent in statistical software: SPSS, AMOS, STATA.
- Thoroughly skilled in using Linux operating systems.