Rongsheng (Royce) Zhang

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EDUCATION

University of Illinois Urbana-Champaign **Aug. 2024 - Present**
Bachelor of Science (Current) GPA: 3.90/4.00
Double Major in Mathematics (Data Optimization Concentration) and Statistics.
Minor in Computer Science and Data Science.
Core Courses:
CS 105 (Intro Computing: Non-Tech), CS 124 (Intro to Computer Science I), CS 128 (Intro to Computer Science II), CS 357 (Numerical Methods I), MATH 347 (Fundamental Mathematics), MATH 416 (Abstract Linear Algebra), MATH 417 (Intro to Abstract Algebra), STAT 107 (Data Science Discovery), STAT 207 (Data Science Exploration), STAT 410 (Statistics and Probability II), STAT 425 (Statistical Modeling I)
Ongoing Courses:
CS 173 (Discrete Structures), CS 225 (Data Structures), MATH 482 (Linear Programming), STAT 385 (Statistics Programming Methods), STAT 429 (Time Series Analysis), STAT 431 (Applied Bayesian Analysis)
Courses in the Next Semester:
STAT 426 (Statistical Modeling II), MATH 484 (Nonlinear Programming), IS 477 (Data Management, Curation, & Reproduction), CS 307 (Model & Learning in Data Science), CS 441 (Applied Machine Learning), CS 440 (Artificial Intelligence)

Xi'an Jiaotong-Liverpool University **Sept. 2022 - Jul. 2024**
Bachelor of Science GPA: 3.88/4.00
Major in Financial Mathematics.
Core Courses:
MTH017 (Linear Algebra for Mathematical Science), MTH029 (Calculus (Mathematical Sciences)), MTH008 (Multivariable Calculus (Science and Engineering)), MTH016 (Introduction to Financial Modelling), ACC103 (Introduction to Financial Accounting), ECO109 (Principles of Microeconomics), MTH113 (Introduction to Probability and Statistics), MTH125 (Real Analysis), ECO120 (Principles of Macroeconomics), FIN104 (Introduction to Finance), MTH106 (Introduction to the Methods of Applied Mathematics), MTH116 (Foundations of Financial Computing)

INTERNSHIP EXPERIENCE

Lenovo, AI Model Evaluation Intern **Jun. 2025 – Aug. 2025**

- Evaluated Text-to-Image generation models in terms of quality, relevance, and diversity.
- Assessed Retrieval-Augmented Generation (RAG) systems on accuracy and information coverage.
- Assisted in building evaluation datasets and metric systems, contributed to manual annotation and result analysis, and supported the optimization of evaluation workflows and tool development.

Zhonghui Boyu Technology Co., Ltd., LLM Application Intern **Jun. 2024 – Aug. 2024**

- Designed and deployed local LLMs using Ollama, and implemented LangChain-based RAG pipelines.
- Optimized hybrid search algorithms (Integrating TF-IDF with embedding vector search), achieving a 40% increase in deployment speed and a 30% improvement in response accuracy.

Shenwan Hongyuan Securities, Market Data Analysis Intern **Aug. 2023**

- Analyzed daily stock market data using Excel and Jupyter Notebook to monitor short-term market fluctuations.
- Applied time series analysis techniques—including ARIMA modeling and moving average smoothing—to identify patterns and evaluate market volatility.
- Organized content from past financial television programs and supported daily administrative tasks.

RESEARCH EXPERIENCE

Medical Physics Project: Processing Medical Images, Research Assistant **Nov. 2023 – Present**

- Acquired knowledge of the fundamental mathematical principles and applications of convolutional neural networks such as U-net, Dense-net, and Alex-net.
- Developed a reinforcement learning algorithm to automate the segmentation of tumors and organs-at-risk (OARs) in MRI scans for IMRT inverse planning, enabling accurate determination of radiation target areas and incidence angles.
- Applied geometric deep learning to predict MLC aperture shapes from dose-volume constraints, improving multi-leaf collimator motion efficiency in sliding window IMRT.

Risk Stratification of PORT in N2 NSCLC (SEER), Research Assistant **Nov. 2025 – Present**

- Built a reproducible SEER cohort for N2 non–small cell lung cancer with rigorous inclusion criteria and feature engineering, harmonizing staging and histology and deriving the lymph-node ratio.

- Estimated the effect of postoperative radiotherapy using a causal pipeline that combines propensity score matching with balance diagnostics and survival analysis via Kaplan–Meier, log-rank tests, and multivariable Cox regression.
- Conducted robustness checks heterogeneity, AJCC 7–8 harmonization, and competing-risk analyses.

Large Model Training and Optimization, Research Assistant **Sept. 2025 – Nov. 2025**

- Researched and compared end-to-end training workflows of large-scale LLMs (e.g., DeepSeek vs. GPT), covering data preparation, pretraining, distributed optimization, and alignment methods.
- Analyzed state-of-the-art fine-tuning techniques (LoRA, adapters, prefix/prompt tuning, instruction tuning, RLHF/DPO) and documented implementation strategies to support model development.

Wavelet Analysis of Geopolitical Risk and Market Linkages, Researcher **Jun. 2023 – Jul. 2023**

- Analyzed around 50,000 records from global stock and economic indices using wavelet coherence methods to investigate short- and long-term linkages among geopolitical risk, oil prices, policy uncertainty, and market dynamics.
- Identified lead–lag relationships and scale-specific dependencies through Continuous and Cross Wavelet Transforms, revealing cyclical feedback mechanisms driving cross-market contagion during geopolitical crises.

PUBLICATIONS

Paper: Wavelet Coherence Approach Linking Russo-Ukrainian War, Oil Prices, Geopolitical Risk, Stock Market, and Policy Uncertainty in the Global Economy, Corresponding Author and Co-author Jul. 2023

- Authors: Rongsheng Zhang, Yangguang Shi, Xuedong Song. Accepted by the 2023 International Conference on Education, Management, Economics and Social Science (ICEMESS); will be published in WOP in Education, Social Sciences and Psychology (ISSN 2515-2904), submitted to CPCI and CNKI for indexing. DOI: 10.23977/ICEMESS2023.114

ACADEMIC ACTIVITIES

Peking University Summer School, Large Model: From Foundation to Frontier, Participant **Jul. 2025**

- Attended lectures on neural networks, deep learning, attention mechanism, transformers, and large-scale models.
- Engaged in paper reading reports and course project presentations on the applications and fine-tuning of large models.

SURF Summer Undergraduate Research Fellowship, Participant **Jun. 2023 – Sept. 2023**

- Participated in the program *Artificial Intelligence in Finance with Python*, producing an academic poster titled *"Machine Learning Approaches to Predict Crime Rate in the City of Los Angeles."*
- Processed over 200,000 lines of crime data and applied machine learning for predictive analysis.

EXTRACURRICULAR ACTIVITIES

Peer Tutoring Club, Internal President **Sept. 2022 – Mar. 2024**

- Managed the organization and daily operation of a 120-member club.
- Organized academic seminars, competitions, and a learning partner program for cross-college support.
- Awarded the "Best Contributing Club" recognition.

XJTLU Student Innovation and Entrepreneurship Competition, Group Leader **May. 2024**

- Designed a village intelligent travel App integrating AI for personalized route planning and e-commerce connectivity.
- Won Third Prize and initiated collaboration plans with a tourism company.

HONORS

Dean's List **Jun. 2025**
Asia-Pacific Mathematical Contest in Modeling, First Prize **Aug. 2024**
University Academic Achievement Scholarship **Jul. 2024 & Jul. 2023**
University Outstanding Student **Nov. 2023**
Summer Undergraduate Research Scholarship **Sept. 2023**

SKILLS

Languages: Mandarin (Native), English (Fluent)
Programming: Python (Proficient), Java (Intermediate), MATLAB (Intermediate), R Studio (Intermediate), SQL (Basic), C++ (Basic)
Data Analysis: Machine Learning (Intermediate), Deep Learning (Intermediate), Data Visualization (Proficient)
Office Tools: Excel, PowerPoint, Word, Outlook (Proficient)