Linyan Li

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Education

University of Wisconsin-Madison — Madison, Wisconsin

BS in Statistics and Data Science (Double Major) | ***GPA**: 3.873* — Sep. 2024 – May 2026

- **Relevant Coursework**: Calculus&Analytic Geometry 1&2; Calculus–Functions of Several Variables; Linear Algebra; Data Science Modeling I&II; Data Science Programming I&II; R for Statistics; Statistical Data Visualization; Introduction to the Theory of Probability; Introduction to Probability and Mathematical Statistics II; Statistical Experimental Design; Introduction to Machine Learning and Statistical Pattern Classification
- **Awards**: Dean's Lists (Fall 2024, Fall 2025); Undergraduate Scholarship for Summer Study ($1000)

University of Nottingham Ningbo China — NingBo, China

BS in Finance, Accounting and Managemente (Honors) | ***Upper Second Class*** — Sep. 2021 – Jun. 2024

- **Relevant Coursework**: Quantitative Methods; Management Strategy; Introductory Econometrics; Database Design and Implementation; Corporate Finance; Fundamentals of Financial&Management Accounting
- Transferred to UW-Madison in 2024 Fall

Work Experience

Data Scientist Research Assistant — Jun. 2025 – Aug. 2025

Zhongguang Suchuang (Chongqing) Technology Co Ltd — *Chongqing, China*

- Analyzed 50k+ local retail transactions using Python (pandas, scikit-learn) and time-series forecasting models (ARIMA and Prophet), producing weekly demand forecasts that improved small-vendor inventory turnover by 8%
- Built customer-segmentation pipelines with K-Means and DBSCAN to identify underserved consumer segments, personalized insights by field teams and boosted sales by 12% for low-income vendors versus baseline periods
- Developed and deployed an interactive Tableau dashboard that scheduled extracts visualized sales, demand, and stock metrics, enabling non-technical shop owners to make data-driven pricing and purchasing decisions

Research Assistant — Nov. 2023 – Jan. 2025

University of Nottingham Ningbo China | Advisor: Prof. Lei Liu — *Ningbo, China | Hybrid*

- Conducted research in the Computational Combinatorial Optimization Lab on integrating mathematical modeling and AI-driven optimization for large-scale scheduling systems
- Integrated Large Language Models with operations research to build adaptive scheduling pipelines for constraint extraction, job classification algorithms, automated task allocation and reduced planning time by 20%
- Presented the research project at the 4th NUBS Tri-Campus Conference as the only undergraduate student

Quantitative Research & Data Analysis Intern — Jun. 2023 – Aug. 2023

Kantar World Panel - CTR Market Research Co., Ltd — *Guangzhou, China*

- Conducted market-trend and consumer-behavior analysis for Colgate, Always and Freepoint using Excel/SPSS and Python (ETL & feature engineering), evaluating new product performance and cannibalization across SKUs.
- Processed and visualized KPI dashboard for P&G in Python (pandas, plotly) to Tableau (gain–loss & brand share variance), improving reporting efficiency by 50% and drive 3-5 quarterly strategic recommendations
- Scraped and Analyzed 2k+ e-commerce live-streaming records (Tmall, Tiktok) and built a gradient-boosting prospects classifier (F1 score: 0.86) to identify potential market growth opportunities

Management Consulting Intern (PTA) — Jan. 2023 – Mar. 2023

Boston Consulting Group (Shanghai) Co., Ltd — *Shanghai, China*

- led early-demand interviews with 15 stakeholders in the automaotive aftermarket project, analyzed e-commerce channel trends and explored new retail model with log-log regression and K-modes to size opportunities
- Built a 3-year electric vehicle market dataset across 10+ segments with a Python/SQL ETL (BeautifulSoup, OCR and pandas) to collect data on market size, policy data, social media post and industry report
- Assessed China's new energy automobile industry under carbon neutral policy and built scenario models by segment and analyzing unit economics and capability gaps, quantified revenue/margin to be around 16%

Conference

Linyan Li, Yuqiang Ning (Co-Author) , "From Links to Lanes: A Lane-Level Traffic Assignment Framework."
Accepted for presentation at the 2025 INFORMS Annual Meeting, Atlanta, Georgia, USA, October 2025.

- submitted a lane-level traffic assignment framework addressing the link-based model's aggregation bias
- Proposed a multi-layer lane-based network structure capturing lane-changing and intersection control interactions
- Integrated nonlinear BPR functions with KKT-based equilibrium optimization to model realistic congestion
- Conducted microscopic traffic simulations using Simulation of Urban Mobility on 3 lanes, simulating 1200 vehicles
- Validated the framework on real-world urban (Sioux Falls) networks, improved accuracy in congestion prediction by 22% and providing practical implications for lane management and transportation policy

Linyan Li, Lei Liu (Advisor) , "A Reinforcement Learning Approach to Dynamic Pricing of Perishable Products."
Presentation at the 4th Nottingham University Business School Tri-Campus Conference, Nottingham, UK, April 2024.

- Developed RL-based dynamic pricing strategies for perishable products using Deep Q-Learning and Actor–Critic, integrated ML demand forecasting with LSTM and CPLEX optimization to model stochastic demand and shelf life
- Built an adaptive, real-time pricing AI agent targeting the revenue–waste trade-off, containerized using Docker and served using a webapp (HTML/React) through FastAPI with Redis caching, achieving <100 ms inference latency
- Validated in simulated retail scenarios for 14 days, demonstrating increase of 10% gross margin and 14% inventory turnover rate and reduce 21% daily waste while keeping stockout rate to be less than 5%

Research Projects

Health Data Experimentation | *R, Full Factorial DOE, ANOVA, Linear Modeling* Mar. 2025 – May 2025

- Designed and conducted a 2^4 full factorial study over 16 nights on temperature, screen exposure, bedtime, and light conditions on sleep quality; implemented half-normal plots and two-step optimization to identify
- Estimated main and interaction effects with ANOVA&OLS model, implementing regression refitting and applying nominal-the-best optimization to balance mean sleep score and variance stability
- Achieved R^2 of 0.81 with 5-fold cross-validation and all retained key factors significant ($p < 0.05$)

LLM-Based Surgical Scheduling Optimization | *Python, CPLEX, Zhipu API, COE* Sep. 2024 – Jan. 2025

- Developed an API-based scheduling framework integrating GLM-4 model with operations research to automate surgical case analysis, surgery sequencing and medical machine allocation, handling requests in real time
- Applied the Chain of Expert multi-agent framework including constraint engineer, data validator and mixed-integer programming to translate policies and surgeon information into constraint templates and model selection
- Linked LLM outputs to MILP in CPLEX, tested with 1k+ surgeries across 20 rooms and improved scheduling efficiency by 18%, resource utilization by 22%, and real-time decision speed by 20%

Beverage Chain Store Database | *Python, Tableau, SQL* Feb. 2024 – May 2024

- Implemented an comprehensive database (ER diagram, schema, data dictionary) for a beverage chain store and 30+ SQL queries to automate core workflows for customers, staff, suppliers and 3rd party logistic providers
- Built Tableau dashboards and ran OLS regression to estimate order price, identified main customers to be 14-29 years old and statistically significant price factors to be gender (+20.96 rmb) and offline ordering (+17.25 rmb)

NUBS Strategy Consulting Program | *Python, NLP* Oct. 2022 – Feb. 2023

- Led an 8-member team and built a Python KPI model tracking efficiency (throughput/hour, on-time completion, rework rate) and inclusion (retention, promotion rate, training-completion gap) of Inclusion Factory's workforce
- Quantified performance drivers with multiple regression and K-means clustering and implemented text analytics on employee feedback using TF-IDF and logistic regression and sentiment analysis using BERT model
- Authored a 16,000+ words data-driven consulting report, integrating quantitative and textual insights, recognized under the Nottingham Advantage Award and adopted for the client's strategic planning

Volunteer Experience

Student Barista | Wisconsin Union Coffee Apr. 2025 – Now

- Assisted in coffee preparation, food service, and cashier operations in a high-volume café

Excellent Volunteer | The Nottingham University Confucius Institute Sep. 2021 – Jun. 2024

- Completed weekly Chinese language instruction for 20+ international students to better learn Chinese.

Technical Skills

Programming & Languages: Python, Linux, SQL, R, HTML, Julia **Framework:** FastAPI, React
Tools: Git/Github, CPLEX, Pyomo, SUMO, AWS, GCP, Docker, Gantt Chart Visualization, Shiny
Libraries: Pandas, Numpy, Scikit-learn, Matplotlib, Seaborn, SimPy, MILP, LangChain, BeautifulSoup
Coursera:AI in Healthcare by Stanford: Machine Learning for Healthcare, AI Applications in Healthcare