

Jingyan Li

jingyanli0302@gmail.com | Fremont CA 94539

Education

University of California, Berkeley

Berkeley, CA

Master's degree in Industrial Engineering and Operations Research

Expected Graduation: May 2026

- Coursework: Machine Learning and Data Analysis

Tsinghua University

Beijing, China

Bachelor's Degree in Industrial Engineering, **GPA: 3.79/4.00**

Sep.2021-Jun. 2025

- Coursework: Operations Research, Applied Statistics and Data Analytics, Machine Learning and Data, Modeling and Simulation, The Practice of Computer Programming, Data Structures and Algorithm Analysis, Probability Theory
- Awards: Bronze team in The Fresh Connection competition in the Global Student Change (2025), Tsinghua University Outstanding Award for Science and Technological Innovation (2024), National Scholarship (2022, rank 1/52)

Cornell University

Ithaca, NY

Exchange Student in Operation Research and Information Engineering, **GPA: 3.84/4.30**

Jan. 2024-May 2024

- Coursework: Multivariate Analysis, Principles of Supply Chain Management.

Internships

Audi China R&D

Beijing, China

Autonomous Driving Strategy & Product Design Intern

Feb. 2025-Jun. 2025

- Researched autonomous driving algorithms and technologies, including Vision-Language Models, event camera perception, behavior prediction, lane-change planning, and AI-based noise reduction.
- Using Python and PostgreSQL to develop an HMI database for testing systems.
- Built a closed-loop database management system for raw sensor data collection, data annotation, virtual environment reconstruction, and virtual testing.

Inner Mongolia North Hauler Joint Stock Co. Ltd.

Baotou, China

Manufacturing Planning Intern

Aug. 2024-Sept. 2024

- Applied ERP systems to manage multi-level Bills of Materials, monitor stock levels, and execute capacity planning; streamlined manufacturing planning processes at this leading manufacturer of heavy-duty mining trucks and equipment to improve production efficiency.
- Developed a forecast-driven inventory management system to deal with excess stock levels. Utilized (s, S) policy, pooling strategy, and component sharing across truck products, reducing average inventory by 23% while maintaining a 95% service level.

China Galaxy Securities

Beijing, China

Quantitative Research Intern

Jul. 2023-Aug. 2023

- Analyzed and visualized stock market risks by constructing style factors such as profitability and volatility using the Barra model, identifying that low-volatility portfolios were more stable but yielded lower returns while high-profitability portfolios exhibited a similar but slightly delayed performance trend.
- Developed a pairs trading model in Python focusing on the top industries with the highest revenue growth rates. Utilized OLS regression to calculate hedge ratios and z-scores to identify mean-reversion opportunities. Implemented stop-loss and take-profit strategies, achieving an annual cumulative return of 17%.

Academic Research & Projects

Text Mining & Topic Classification for Global Supply Chain Management

Beijing, China

Thesis

Oct. 2024-Jun. 2025

- Built an NLP pipeline in Python to curate 24,150 papers, tokenize and lemmatize text, remove stop words, and perform exploratory analysis with data visualization.
- Fine-tuned BERT base in PyTorch and Transformers, achieving weighted F1 0.73, which improved by 0.40 weighted F1 over the benchmark Multinomial Naive Bayes model.
- Ran Bayesian hyperparameter optimization in Optuna with 52 completed trials; used mixed precision, gradient checkpointing, and gradient accumulation with 4 NVIDIA A100 40 GB GPUs.

The Fresh Connection Competition – Bronze Team

Amsterdam, The Netherlands

Team leader & Supply Chain Manager

Feb. 2025-May 2025

- Led the team as Supply Chain Manager, directing three peer managers in Purchasing, Operations, and Sales; lifted ROI from

–4.54% baseline to 17.73% in Round 1, 20.94% in Round 2, and 29.31% in Round 3.

- Engineered Excel Solver scenarios and KPI dashboards; built forecasting and optimization models for safety stock, multi-echelon replenishment, capacity-constrained sequencing, warehouse location, distribution, supplier selection, product combination, customer contracts, production processes, EOQ, and workforce planning.
- Established an end-to-end demand-driven S&OP rhythm across four stores; sustained service levels at 96.5 and capacity utilization to 80.8–88.9% across production lines, while reducing the carbon footprint by 5%.

Multi-Drone Task and Path Planning for Power Line Inspection

Beijing, China

Independent Project

Sept. 2024-Dec. 2024

- Designed and modeled a multi-drone system utilizing 3 unmanned aerial vehicles (UAVs) to inspect 1,603 power line points, optimizing coverage and operational efficiency.
- Developed an Integer Linear Programming (ILP) model in Python with Gurobipy and conducted complexity analysis.
- Implemented a distributed Ant Colony Optimization (ACO) algorithm to approximate optimal routing solutions, significantly reducing computation time to a couple of hours.
- Created simulation and visualization tools in Python and AnyLogic to validate algorithm performance, achieving a 43.2% reduction in completion time.

The Design and Augmented Intelligence Lab

Ithaca, NY

Research Assistant, supervised by Professor Salah Kalantari

Apr. 2024-Sept. 2024

- Led data analysis for a study on the effects of sign frequency and scene complexity on navigation-related emotions in virtual environments. Processed and visualized 487k time series VR data points from 187 participants using Python and R, computed transition probability matrices for each link and decision point (note), and applied response surface methods to optimize experimental parameter design.
- Conducted qualitative analysis for a project focused on navigational factors in hospital architecture; coded over 12,000 words from focus group transcripts to extract actionable insights on design and human factors.

Impact of Sign Language Visuals on News Comprehension and Viewer Satisfaction (Published)

Beijing, China

Independent Research, supervised by Professor Patric Rau

May 2022-Sept. 2024

- Designed and executed a mixed design experiment with 24 participants, assessing the impact of various interpreter image sizes and interpretation speed on news comprehension and participants' satisfaction.
- Analyzed data from nine edited video segments with After-Scenario and questionnaires using mixed-ANOVA for group comparisons, Kruskal-Wallis and Wilcoxon signed-rank tests for within-group analysis.
- Published the paper “Visible Sound: The Impact of Sign Language Interpreter Picture Size and Speed on Viewer Comprehension and Satisfaction in News Broadcasts” to HCI2025 as the first author.

Classification Algorithm to Identify Autonomous Underwater Vehicles (AUVs) Fault Situations

Beijing, China

Group Leader

Oct. 2023-Jan. 2024

- Developed and optimized a fault detection algorithm for AUVs using Artificial Neural Networks (ANN), Convolutional Neural Networks (CNN), and Recurrent Neural Networks (RNN) models; utilized Gated Recurrent Units (GRU) to significantly enhance RNN model of up to 97% accuracy.
- Processed 245k data points, applying LabelEncoder to transform categorical features and improving CNN performance by 13% using data slicing and warping techniques for augmentation
- Incorporated Cosine Annealing for learning rate decay, label smoothing, and knowledge distillation, alongside hyper-parameter tuning methods such as dropout, batch normalization, and Xavier initialization to optimize model performance.

Modular Epidemic Transmission Simulation – Third Prize

Beijing, China

41st Tsinghua University Challenge Cup

Dec. 2022-May 2023

- Developed a hybrid simulation model combining Agent-Based Modeling (ABM) and Discrete Event Simulation (DES) using AnyLogic and Java, incorporating time-dependent parameter segmentation and new dynamic equations.
- Integrated modules for personnel movement, disease transmission, patient transfer, testing, and resource allocation.
- Processed and fitted actual epidemic data to piecewise linear parameters, implementing automated data-driven parameter updates over a 70-day simulation period, improving the prediction accuracy of policy impacts by 15%.

Skills

Programming Language: R, Python, C++, SQL

Software: PyCharm, Anylogic, PostgreSQL, Gurobi