Lingxiao Xu

Cellphone:(86)18913364909   Email: lingxiao_xu@outlook.com

Education

Communication University of China, Beijing, China   *Sept. 2021- June. 2025*

B.Eng. in Data Science and Big Data Technology (Big Data in Media); GPA:93/100 (rank: top 5%)

- *Advanced Statistical courses:* Mathematical Statistics, Applied Multivariate Statistical Analysis, Regression Analysis, Bayesian Statistics, Applied Stochastic Process, Optimization Theory and Methods
- *Technology courses:* Big Data and Artificial Intelligence, Machine Learning, Data Mining Methods, Machine Translation Operation Based on Python, Programming Methodology with C/C++, Natural Language Processing

Professional Skills

- **Language skills**: English (Second Language); Mandarin (Chinese)
- **Computer skills**: coding, modeling and statistics in R/ Python/ C/ C#/ Matlab/ Lingo (proficient)
- **Tools and Packages**: Git, Numpy, Pytorch, Scikit Learn

Publications

- **Lingxiao Xu**, and Qing lan Wei. "Statistical Enhancement-Based Robust Multi-Kernel Image" 2025 ACM Multimedia Asia (Under Reviewed)
- Jun He, **Lingxiao Xu**, and Bo Li*. "Optimization and Evaluation Methods for Automation of E-commerce Logistics Networks." 2024 16th International Conference on Computer and Automation Engineering (ICCAE), 2024, DOI:10.1109/ICCAE59995.2024.10569460
- Shiyue Mao, **Lingxiao Xu**, Felipe Rodriguez. "Driving with cleaner engines: the evolution of diesel heavy-duty vehicles in China 2012-2023" The International Council on Clean Transportation(ICCT) Working Paper https://theicct.org/publication/
- **Lingxiao Xu**, Shiyue Mao, Felipe Rodriguez " China heavy-duty vehicle market development (January – June 2024)" The International Council on Clean Transportation(ICCT) Working paper

Research Projects

Novel Multi-Kernel Subspace Clustering with Variance-Covariance Distance

Advisors: prof. Qing lan Wei, Communication University of China   *Nov. 2024 - May. 2025*

- Developed novel clustering algorithm integrating variance-covariance statistics with tensor-based graph fusion, achieving perfect clustering (ACC=1.0) on some benchmarks and 10.96% improvement over state-of-the-art.
- Addressed kernel noise via variance-covariance distance metrics and NMF, constructing block-diagonal affinity graphs. Open-sourced implementation: https://github.com/Lingxiao-Xu/VCSD-MPKG
- Reduced complexity from $O(n^3)$ to $O(n^2)$; validated on 6 datasets against 13 methods.

Construction of Knowledge Graphs and Style Image Generation for China's Four Famous Brocades

Advisors: prof. Li Bo & prof. Hong Zhiguo, Communication University of China   *Apr. 2023 - Apr. 2024*

- Secured a software copyright after I integrated over 25,000 color images covering 48 patterns and developed the "Chinese Famous Brocade Web Application System".
- Analyzed brocades' data using relationship extraction techniques and graph databases (Neo4j) to construct a knowledge system. Applied convolutional neural networks to create digitally textured brocade. Won a silver medal

in the National "Internet+" Innovation Competition.

- Project Portfolio: A comprehensive collection of project outcomes is available at:
  https://drive.google.com/file/d/1XbQxc_kjggaXnOLF5xScgMlGavvsWF0Q/view?usp=sharing

Evaluating Aesthetic Features of UI Interfaces through Data Mining *Oct. 2023 - Feb. 2024*

Advisor: Dr. Jiang Zexun, Communication University of China

- Acquired a software copyright after completed the initialization and migration of a UI database.
- Preprocessed UIUC's Rico dataset containing over 72,000 unique UI screenshots, using ResNet models and graph neural networks for denoising, resulting in a refined dataset of 60,000 entries.
- Extracted key aesthetic features, e.g., consistency and harmony, using deep learning models (StyleGAN) to optimize user interface design.
- Developed an automated tool that generates UI optimization suggestions.

Optimization for Automation of E-commerce Logistics Networks. *Apr. 2023 - May 2023*

Advisor: prof. Li Bo, Communication University of China

- Addressed issues in e-commerce logistics networks, including cargo volume forecasting, station closures, network adjustments and evaluations for emergency mobilization and structural optimization.
- Used logistics network data from 2021 to 2023to construct models: ARIMA-LSTM Cargo Flow Predictor, Optimized Planning via Simulated Annealing, and SITE-TOPS Evaluation System.
- Combined ARIMA and LSTM models to achieve optimal cargo volume forecasts, with weights of 0.24 and 0.7.

Working Experiences

The International Council on Clean Transportation (ICCT) *Apr. 2024 - Oct. 2024*

Research assistant, the Heavy-Duty Vehicles (HDV) program

Advisor: Mao ShiYue

- Analyzed data from nearly 10 million Chinese heavy vehicles to assess key indicators such as fuel consumption, service quality, total weight, and engine displacement from 2012 to 2023.
- Authored a brief on the trends of diesel heavy vehicles, explaining the progress of pollutant control technologies; designed the report in a figure-heavy, text-light, and infographic style.
- Authored the 2023 Zero Emission Truck and Bus Market Update Brief, presenting a high-level overview of major market patterns for zero-emission heavy-duty vehicles (ZE-HDV) based on 2023 sales data; designed the brief in a figure-heavy, text-light, and infographic style.
- Prepared the Zero-emission Truck and Bus Market Spotlight Q1 2024 briefing, which will provide an update on the China ZE-HDV market landscape based on the latest sales data.

Honors and Awards

National Student E-commerce "Innovation, Creativity and Entrepreneurship" Competition	Special Prize	*Jun. 2024*
"Zhengda Cup" National College Student Market Research and Analysis Competition	National Third Prize	*May 2024*
The Interdisciplinary Contest in Modeling (ICM)	Meritorious Winner	*May 2024*
National Scholarship for Undergraduates	First Prize (top 0.2%)	*Dec. 2023*
Asia and Pacific Mathematical Contest in Modeling	Second Prize	*Nov. 2023*
National College Students Statistical Modeling Contest	Second Prize	*Aug. 2023*
"Huashu Cup" Mathematical Contest in Modeling	Third Prize	*Aug. 2023*
MathorCup Mathematical Modeling Challenge	First Prize	*May 2023*