

# Yutong Lyu

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## EDUCATION

### University of Michigan

*Bachelor of Science in Data Science — GPA: 3.7*

Ann Arbor, MI

*Expected May 2026*

### Guangdong University of Finance & Economics

*Bachelor of Economics in Finance Engineering — GPA: 3.88*

Guangzhou, China

*Sep 2022 – Jun 2024*

## TECHNICAL SKILLS

**Program Leadership:** Research sprint coordination, cross-functional scheduling, requirements tracking, risk mitigation

**Programming Languages:** Python, C++, Java, Javascript, R, SQL, LaTeX

**Data & Systems:** PyTorch, NumPy, Pandas, MATLAB, STATA, Git, Linux/Unix workflows

**Languages:** English, Mandarin Chinese, Cantonese

## RESEARCH EXPERIENCE

### Jiangdong Tourism Data-Driven Poverty Study

Nov 2023 – May 2024

*Research Team Leader — Guangdong University of Finance & Economics*

*Guangzhou, China*

- Led a multidisciplinary research sprint from survey design and field interviews to final analytics, delivering actionable policy recommendations and geo-spatial dashboards adopted by faculty and community partners to inform tourism-driven poverty alleviation funding.

## PROFESSIONAL EXPERIENCE

### Software Engineering Intern

Jul 2025 – Aug 2025

*Shenzhen Taikejia Technology Co., Ltd*

*Shenzhen, China*

- Developed and maintained Python automation pipelines to execute daily model runs, optimizing the core data processing script to reduce its execution time by **40%** on benchmark datasets.
- Integrated **Gurobi/COPT** solver APIs with a Python-based reporting script to automatically parse model results and visualize **15+ key performance metrics** (e.g., output solving performance log, solve time, optimality gap, normalization metrics).
- Tracked, prioritized, and resolved **30 bugs and feature requests** from the research team, maintaining the data pipeline's integrity and supporting the research schedule.

## TECHNICAL PROJECTS

### MIP Solver | C++, Python, CMake, pybind11

Summer 2025

- Developed a cross-platform **Mixed Integer Programming solver** implementing a branch & bound algorithm with pybind11 bindings for Python, enabling integration with existing analytical workflows.
- Maintained **100% automated test coverage** for modeling and constraint validation; published reproducible benchmark dashboards and comprehensive user documentation.

### Dynamic Social Media Web Application | ReactJS, Flask REST API, Python, AWS EC2, Git

Fall 2025

- Built a full-stack social media application with real-time interactions, infinite scroll, and asynchronous rendering, reducing page reload time from **2.3s** → **0s**.
- Designed a Flask REST API with modular endpoints, achieving **100% test pass rate** and supporting data retrieval for over 100 concurrent posts on AWS EC2.

### Deep Learning for Dog Breed Classification | PyTorch, CNN, Vision Transformer (ViT)

Fall 2025

- Trained a hybrid CNN-ViT architecture to classify 10 dog breeds using 8,867 labeled images, achieving **93% validation accuracy** and 0.96 AUROC through regularization and data augmentation.

### Interactive Population Forecast Dashboard | R, Shiny, Data Visualization

Fall 2024

- Collaborated with a student team to build an interactive R Shiny dashboard for UN population data, featuring **4 dynamic input filters** (e.g., region, date range) and **2 output panels** (projection plot and summary table).

## RELEVANT COURSEWORK

**Machine Learning & AI:** Machine Learning, Data Structures and Algorithms, Computer Science Pragmatics

**Statistics & Data Science:** Applied Regression Analysis, Statistical Computing, Data Analysis and STATA Application, MATLAB Computing

**Computation & Systems:** Database Management Systems, Web Systems, Discrete Math, Linear Algebra