

# JIURU LYU

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## EDUCATION

**BS in Applied Mathematics and Statistics; Minor in Computer Informatics** Aug 2022 - May 2026

*Emory University, Emory College of Art and Science*

*Atlanta, GA*

- Cumulative GPA: 4.0/4.0; Honor: Deans List
- Coursework: Optimization Theory, Mathematical Statistics, Differential Equations, Real Analysis, Graduate-Level Numerical Analysis, Graph Theory, Regression Analysis, Causal Inference, Data Structures & Algorithms, Database System.

## SKILLS AND INTERESTS

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| <b>Research Interests</b> | Numerical Optimization, Global Optimization, Causal Inference, Machine Learning                    |
| <b>Huam Interest</b>      | Coffee Brewing, Aviation, Traveling, Photography   |
| <b>Skills</b>             | MS Office, Python, Java, LaTeX, R, MATLAB, HTML, CSS, JavaScript, Typescript, Angular, PostgreSQL. |
| <b>Language</b>           | Mandarin Chinese (Fluent), English (Fluent), Spanish (Elementary).                                 |

## RESEARCH PROJECTS

**Research Assistant** Oct 2023 - Present  
*Department of Mathematics, Emory University* *Atlanta, GA*

- Conduct independent research on global optimization methods under the supervision of Professor Manuela Manetta.
- Enhanced the efficient of the Double Descent with Color Diffusion algorithm with derivative-free optimization techniques.
- Applied the algorithm to find global minimized potentials for Morse Clusters and Lennard-Jones Clusters.

**Directed Reading Program: Numerical Optimization** Aug 2024 – Dec 2024  
*Department of Mathematics, Emory University* *Atlanta, GA*

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**Directed Reading Program: Probalistic Method in Graph Coloring** Aug 2023 - Dec 2023  
*Department of Mathematics, Emory University* *Atlanta, GA*

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**Student Researcher** Jun 2023 - Aug 2023  
*Xian Jiaotong-Liverpool University* *Suzhou, China*

- Implemented deep learning models (LSTM, GRU, Attention Mechanism, Transformer Model) for stock price prediction.

- Co-authored a conference paper comparing deep learning models for stock price forecasting (under review).

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**TEACHING/METORING EXPERIENCE**

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**Tutor in Mathematics** Sep 2023 - Present  
*Office of Undergraduate Education, Emory University* Atlanta, GA

**Teaching Assistant for QTM 151 (Scientific Computing with Python)** Aug 2024 – Dec 2024  
*Department of Quantitative Theory & Methods, Emory University* Atlanta, GA

**Course Tester** Jun 2022 – Nov 2022  
*DeepLearning.AI* Remote

- Contributed to course quality enhancement during development by testing and providing feedback.
- Acquired proficiency in Machine Learning concepts, including TensorFlow, Regression Analysis, Decision Trees, Deep Learning techniques, Clustering Analysis, PCA, and Backpropagation.
- Gained experience with NumPy, SciPy, Pandas, and other essential Machine Learning packages.

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**INTERNSHIP EXPERIENCE**

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**Digital Technology Intern** Jun 2024 - Aug 2024  
*Baker Hughes* Shanghai, China

- Developed and tested the SaaS platform ValvKeep Asset Management (VKAM), a valve life-cycle management system.
- Applied Angular, SQL, HTML & SCSS to implement features and designed UIs for customer report
- Used Rally to write and execute test cases, gaining experience in SQL queries for database validation.
- Practiced Agile software development workflow, participating in regression testing and hotfix releases.

**Quantitative Investment Analyst** Jan 2023 – Aug 2024  
*Algory Capital* Atlanta, GA

- Managed investments and risk profiles for Algory Capital, a student-managed endowment fund exceeding \$100,000.
- Utilized Monte Carlo Simulation to calculate Conditional Value at Risk (cVaR) for risk management and integrated insights into a grid search algorithm to provide risk-averse portfolio management suggestions.
- Developed Mean Reversion in Pair Trading algorithms based on historical data, cointegration tests, and ADF tests.
- Conducted sentiment analysis using Reddit API and Web Scraper packages to inform portfolio management decisions.

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## HONORS AND AWARDS

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| <b>Certificates</b> | Machine Learning Specialization Certificate, Google Data Analytics Specialization Certificate. |
| <b>Honors</b>       | Phi Eta Sigma Honor Society.   |

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## DECLARATION

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I hereby declare that all the details furnished above are true to the best of my knowledge and belief.

Jiuru Lyu

Last updated on: October 26, 2024