

# Ruibin Lyu

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## EDUCATION

### University of California, Los Angeles

*B.S. in Statistics and Data Science / B.S. in Applied Mathematics*

GPA: 3.99/4.00, Dean's List (All Quarters)

**Relevant Learning:** Mathematical Finance, Machine Learning, Data Science, Stochastic Process, Optimization

**Los Angeles, CA**

*Expected Graduation: June 2024*

### University of California, Santa Barbara

*B.S. in Financial Mathematics and Statistics*

GPA: 4.00/4.00, Dean's List (Fall 2020 – Winter 2022)

**Santa Barbara, CA**

*September 2020 – June 2022*

## TECHNICAL SKILLS

**Programming Language:** Python (PyTorch, NLTK, statsmodels, scikit-learn, pandas, NumPy), R (dplyr, caret), C++

**Database:** MySQL, PostgreSQL, Redshift, BigQuery

**Visualization:** Tableau, Python(matplotlib), R(ggplot2), PowerPoint

## PROFESSIONAL EXPERIENCE

### KPMG Consulting

*Intern, Team of MC (Management Consulting) Cloud*

**Shanghai, CN**

*July 2023 – September 2023*

- Engaged in a data migration project for Starbucks China that aimed to utilize Alibaba's cloud architecture for advanced data utilization that enhance business decision-making
- Developed automation scripts that increased data migration efficiency by 300% and significantly reduced errors
- Data Quality Assurance: used SQL to probe data problems, including data inconsistency between tables, data loss, and outliers; reported to senior consultants and discussed possible solutions in weekly meetings
- Data Transfer: used SQL and Python to establish relevant data tables, execute data type conversions, validate data accuracy
- Resolved technical challenges in data migration, including type conversion issues and compatibility; initiated the integration of machine learning capabilities to derive strategic business insights

### Da Cheng Fund Management Co.

*Investment Analyst*

**Shanghai, CN**

*June 2021 – September 2021*

- Developed a Python script leveraging API to download financial data from Wind Financial Terminal and Shanghai Metals Market
- Conducted extensive global metal trading research and comprehensive data collection across various asset classes
- Performed ETL processes using MySQL and Python, validating data for equity, fixed income, and non-ferrous metal investments
- Automated data analysis and visualization processes using Python, integrating Tableau and matplotlib for dashboard creation
- Presented analytical insights and strategic recommendations in management OKR reviews, with a focus on market dynamics

## PROJECT EXPERIENCE

### Research on Deep Reinforcement Learning (Advised by Prof. Guido Montufar)

*Researcher*

**Los Angeles, CA**

*March 2023 - Present*

- Focused on the impacts of graph theoretic methods on the reinforcement learning procedure; investigated Q-learning with temporally extended actions in the context of finite Markov Decision Processes
- Utilized Python in conjunction with machine learning packages such as PyTorch and NumPy to advance the development of reinforcement learning experiments around the project concepts
- Currently investigating relational biases in reinforcement learning

### Federated Learning on EMNIST Dataset (Advised by Prof. George Michailidis)

*Researcher*

**Los Angeles, CA**

*March 2023 – June 2023*

- Investigated the impact of distributing training data across multiple devices via federated learning
- Assessed the machine learning performance by image classification on EMNIST Dataset
- Evaluated four distinct data distribution scenarios, found minor influence of data distribution; achieved a high test accuracy in real-world simulated conditions.

### Sentimental Analysis on Natural Language Processing Algorithm

*Researcher*

**Los Angeles, CA**

*September 2022 – December 2022*

- Leveraged NLTK and TextBlob python libraries and implemented algorithmic solutions to predict the sentiment of thousands of customer reviews from online restaurant review platforms
- Built classification using logistic regression, random forest, and long short-term memory (LSTM) to identify key words and grammatical style and to label various sentiments; achieved the best accuracy of 81% with random forest
- Provided advisory support and guidance both internally and externally on algorithms that impact natural language processing and data analysis for various applications.