

# Xu Zhuang

Ph.D. Student

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## EDUCATION

**University of California, Irvine**

*Ph.D., in Mathematics*

California, United States

*September 2022 - Present*

**Jilin University**

*B.S., in Mathematics*

Jilin, China

*August 2018-June 2022*

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## SKILLS AND CERTIFICATIONS

**Languages:** Python, L<sup>A</sup>T<sub>E</sub>X, Markdown

**Python Libraries:** Experience with Numpy, pandas, Matplotlib, Seaborn, Scikit-learn, TensorFlow, XGBoost, LightGBM, Polars

**Certifications:** [Erdős Institute Data Science Bootcamp](#), [Coursera Machine Learning Specialization](#)

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## RESEARCH INTERESTS

Coding Theory and Arithmetic Geometry

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## SELECTED PROJECTS

**Market stock prices predictions** | Erdős Institute

October 2024 - December 2024

- Collaborated as a team to develop machine learning models for predicting the close-of-business prices of SPY, AAPL, and IBM stocks.
- Used Linear Regression, ARIMA, Simple RNN, and LSTM models, with LSTM outperforming others in Mean Squared Error (MSE) and reducing price volatility. Leveraged Python, TensorFlow, and Scikit-learn for data preprocessing, model development, and analysis.
- Github: <https://github.com/yshirai999/AI-based-stock-market-predictions>

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## HONORS AND AWARDS

**Tang Aoqing Honors Program in Basic Science** | *Jilin University*

September 2018 - June 2022

**First Prize-National High School Mathematics League** | *Chinese Mathematical Society*

September 2016

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## MENTORING

- Directed Reading Project (2023 Spring): Probabilistic methods in Combinatorics (Xingjian Wang)
- Directed Reading Project(2024 Fall): Random Matrices (Collin Cheung)