





## Yu(Anna) Luo

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### Research interests

- Geometric Quantitative Trading
- Computational Geometry
- Data Science in AI
- Optimization
- Tensor Decomposition

### Education

**2023 – present**

**University of California,  
Davis**

PhD in Applied  
Mathematics  
Davis, CA

**2020 – 2022**

**Columbia University**

BS in IEOR (Financial  
Engineering);  
*Minor: Applied Mathematics*  
New York, NY

**2017 – 2020**

**Dickinson College**

BS in Mathematics;  
*Minor: Economics*  
Carlisle, PA  
(3+2 Combined Program: dual  
bachelor's degrees from  
Dickinson and Columbia)

### Current situation

Expected to graduate by June 2028 **PhD in Applied Math**

- Advised by Profs. Alex Wein and Jesus De Loera; conducting research in tensor decomposition and combinatorial slicing optimization using mathematical softwares (SageMath, Maple, Macaulay2).
- Completed all core sequences of the program. Earned Master's degree along the way.

### Working Experience

**Oct. 2022 – April. 2023. Quantitative Trading Assistant**

Beijing Boyudingshi Management and Consulting Co.

- Analyzed stock market trends with advanced Time-Series and Neural Network models using algorithms build from scratch by our own in **Python**.
- Trained predictive models on 700+ ETFs and A-shares in the Chinese stock market.
- Supported portfolio management of a 3M fund, enhancing trading strategies.

**April 2020 – April 2021 Tech Department Manager (Part-time Internship)**

Jetzy Co.

- Led a cross-functional team of 20+ engineers on app development and data analysis.
- Reported directly to the founder; hosted weekly departmental meetings.
- Conducted 10+ technical interviews, improving intern recruitment and selection.

### Projects

**Time-Frequency Analysis for Non-Stationary Signals**, with Chen Qian. Applied two harmonic analysis methods (PWVD and WPT) each combined with a different machine learning method (CNN and Random Forest) to stock price forecasting and compare their performance using **Python**, achieving a mean win rate of **72.61%**.

(Ongoing) **Critical Moments of the Slab**, advised by Prof. De Loera. Collaborative work with Marie-Charlotte Brandenburg and Meroni Chiara. Used Sage and Maple to compute extreme values and critical values of volume and moments of a slab (same-dimensional slice of the hypercube) in 4D.

**Symmetric Extension of Overcomplete Tensor**

**Decomposition via Koszul-Young Flattenings**, advised by Prof. Wein. Computed rank and decomposition of symmetric overcomplete 3D tensors.

**Traders in a Strange Land: Agent-Based Discrete-Event Market Simulation of the Figgie Card Game**, DiSilvio, S., Luo, Y., Ozerov, A. (2021). : <https://arxiv.org/abs/2110.00879>