Yiming Song

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EDUCATION

Columbia University, Columbia College, Applied Math & Philosophy — New York, N.Y.
GPA: 3.96, Dean's List (all semesters) — *Fall 2022 – Spring 2026*

Dulwich College Beijing — Beijing, China
International Baccalaureate Diploma Programme (45/45, top 0.4% worldwide) — *Fall 2018 – Spring 2022*
GPA: 4.0, SAT: 1580 / 1600

RESEARCH (Portfolio: https://github.com/yyyiimmiinngg/portfolio)

Sector-specific forecasting of ETF volatility from Twitter sentiment — *May 2023 – Aug 2023*

- Selected as participant of Columbia Summer Undergraduate Research Experiences in Mathematical Modelling, a full-time, fully funded research program with mentors from math, applied math, and CS departments
- With two other undergraduates, implemented a LSTM-based model to predict next-day ETF volatility of major sectors given textual data input from Twitter, which was classified using transformer-based NLP model
- Outperformed baseline autoregressive models and matched current state-of-the-art models, average predictive error of 9%
- Paper presented at Columbia Math Symposium, Jane Street Summer Math Day, CUPP Symposium

Analysis of Anisotropic Materials @ Basov Lab — *Dec 2022 – Apr 2023*

- Performed exfoliation and microscope analysis of novel van der Waals (vdW) materials
- Used Python to perform Fourier analysis and determine diffraction properties of vdW crystals for material applications

Econometric analysis of entrepreneurial performance during the COVID-19 pandemic in China — *Jun 2021 – Dec 2021*

- Applied Lagrangian optimization on utility functions to determine optimal time allocations
- Performed statistical regressions with instrumental variables, logit, probit, etc., and found that higher personal resilience was correlated with firm performance
- Finalist at S.-T. Yau Science Award (economic modeling category) (6 out of 200+)

Machine and Deep Learning analysis of CT scans to predict non-small cell lung cancer — *Oct 2019 – Nov 2020*

- Used machine and deep learning models to detect lung cancer markers in CT scans, improving on state-of-the-art models
- Published in 2021 *IEEE International Conference on Consumer Electronics and Computer Engineering*
- Semi-finalist at S.-T. Yau Science Award (CS category) (12 out of 200+)

SKILLS

Computer: Python, R, Java, LaTeX, Stata, Microsoft Office, Google Suite, Ableton Live, Audacity
Packages: SciPy, Matplotlib, NumPy, Keras, TensorFlow, PyTorch, dplyr, ggplot2
Languages: Fluent in English & Chinese

HONORS

- Pritzker Pucker Summer Internship Fund — *2023*
- High school academic honors (physics, math, music departmental awards) (top 5%) — *2018 – 2022*
- AAPT Physics Bowl National Silver Award (top 20%) — *2021*
- United Kingdom Mathematics Trust Senior Mathematical Challenge Silver Award — *2020*

INTERESTS

Campus activities: Columbia Poker Club (top 6/107 in 2023 tournament), orchestrator and performer in 129th Varsity Show, Columbia Pops Orchestra (arrangement/conducting + trumpet), Columbia Undergraduate Math Society
Hobbies: Jazz trumpet, production and composition: YouTube @ bit.ly/3HryLcs. Cycling, cooking, tutoring, skiing, literature