Daniel Xu

☎ (832) 380-0761 📪 dyxu@mit.edu 🏠 229 Vassar St, Cambridge, MA 02139

📚 Education

Massachusetts Institute of Technology **Cambridge, MA**
*B.Sc. in **Computer Science** and **Applied Mathematics**, Philosophy Minor* 5/26
CS Courses: Design/Analysis of Algorithms, Machine Learning, Computer Architecture/Systems, Data Science
Math Courses: Statistics, Probability, Linear Algebra, Optimization, Discrete Mathematics, Matrix Methods, Calculus III

💼 Experience

Wellington Management Company **Boston, MA**
Quantitative Research Intern 6/24 – 8/24
– ML modelling for alpha research/signal generation in high yield bonds; regression methods, random forest, deep learning
– Implementing and optimizing tooling for model backtesting and portfolio construction on GPU architecture and cloud compute

Turnleaf Analytics **London, UK**
Machine Learning Engineering Intern 1/24 – 2/24
– Built **data imputation** library for **time series** economic data with **ML** via Neural Net, Gaussian Copula, Random Forest, KNN
– Finetuned **model architecture** and **feature representation** for 45% MSE reduction, 15% training time reduction

MIT Computer Science and Artificial Intelligence Laboratory **Cambridge, MA**
Julia Lab Researcher 9/23 – 12/23
– Optimized **scheduling techniques** and **storage schema** for tridiagonalization methods/iterative eigensolvers of **dense matrices**
– Developed **distributed** and **parallel** algorithms for heterogeneous, low-communication **GPU-array** and **CUDA** architectures
– Deployed on **HPC cloud cluster**, optimized resource utilization and reliability by automating **log shipping/analysis/alerting**

Linden Shore **New York, NY**
Quantitative Developer Intern 6/23 – 8/23
– Developed **compression** algorithm & query tool for **backtesting**, **trade execution**, and **reports**, decreasing run times by 70%
– Streamlined **parallel file systems** with schema design, **improved resource balance/utilization**, and automated pipelines
– Deployed service to validate integrity of pipelines from **MongoDB files**, **node/on-chain data**, and **cross-exchange tick data**

MIT Media Lab **Cambridge, MA**
Digital Currency Initiative Researcher 2/23 – 5/23
– Built pipeline to unify multiple **exchange APIs**, used to predict trading volume, transaction value and volatility trends
– Segmented time series data via structural/factor-augmented **vector autoregression**, **mixture models** and **fuzzy clustering**

MIT Department of Economics **Cambridge, MA**
Researcher 2/23 – 5/23
– Modelled secondary markets/receivables funds with **Brownian/Monte Carlo** methods, optimizing for **portfolio distributions**
– Investigated effects of **capital stock shocks** on interfirm transmissions with **shock propagation** and **Markov Chains** methods

Linden Shore **New York, NY**
Quantitative Developer Intern 1/23 – 2/23
– Integrated **ELK Stack** on **Docker** for visualization/monitoring of HPC clusters, arbitrage opportunity, and execution latency
– Improved performance reliability by deploying **Zabbix** monitoring and refactored logging for 34% lower response times
– Fine-tuned compute/memory balancing on local boxes for **low-latency execution**, **back-testing**, and **data pipelines**

Global Research and Consulting **Cambridge, MA**
Data Analytics Project Lead 9/22 – 5/23
– Managed a **5-person team** to deliver recommendations while communicating updates with Jobby and Neighborhood Forest
– Modelled **PCA/clustering effects** of canopy coverage on behavioral dataset by segmenting 500 socio-economic zones

Liri Capital **Chicago, IL**
Private Equity Intern 9/22 – 12/22
– Implemented **NLP** and **digital presence scraping** methods for sourcing processes to identify target companies for acquisition
– **CIM analysis/due diligence** to create **LBO/growth models** of target acquisitions to generate MOIC and IRR hurdles

MIT Sloan School of Management **Cambridge, MA**
Work and Organization Studies Researcher 9/22 – 12/22
– **Statistical methodology**, **data-visualization**, and **web-scraping** optimization tracking trends in management
– **Scraped**, **formatted** and **analyzed** productivity/citation impact in finance-related academia and publications

🖐 Skills

Programming Languages: Python, C/C++, Julia, SQL, Bash
Technologies: Elastic Stack, Docker, MongoDB, CUDA, Linux, Zabbix, Git/Terminal, Agile (Scrum), Confluence/Jira

🏆 Awards

National Speech and Debate Association Rankings; 4th Place
Future Business Leaders of America; 8th, International Business
USA Philosophy Olympiad; Finalist