Edward Zhang

Dunlap, IL | +1 (309)-857-5137 | edward.zhang@duke.edu | linkedin.com/in/ez246 | zhangedward.com

Education

Duke University — Durham, NC
B.S. in Computer Science and Mathematics
Minor in Financial Economics — **GPA**: 4.0 | **SAT**: 1570
Coursework: Asset Pricing & Risk Mgmt, Regression Analysis, Probability, Practical Financial Markets, Data Science
Campus Involvement: Quantitative Finance Club, Duke Applied Machine Learning, Vex Robotics, Formula SAE

Cornell University — Ithaca, NY
Candidate for B.A. in Mathematics, Concentration in Operations Research — *Transferred*
Coursework: Multivariable Calculus, Linear Algebra, Object Oriented Programming/Data Structures — **GPA**: 4.155

Professional Experience

Caterpillar, Inc. — Jun. 2023 – Aug. 2023
Data Science Intern – Global Finance Services Division — *Peoria, IL*
- Utilized DBSCAN clustering algorithm for in-house machine learning model to reduce invoice classification time by 50%
- Forecasted incoming supplier contract volume using Prophet model for more efficient assigning of contracting agent tasks
- Designed program for automatic contract type selection in Python, reducing category buyer review time by 70%

DYAD (dyadstable.com) — Aug. 2022 – Dec. 2022
Quantitative Research Intern — *San Francisco, CA*
- Utilized Monte Carlo methods (simulated annealing) to validate algorithms for $DYAD, a cryptocurrency pegged to $USD
- Constructed valuation models using ETH volatility to forecast DYAD investment prices for 10+ VC firms and investors
- Developed efficient smart contract and token sync algorithm, helping protocol to achieve $100k TVL with minimal gas fees

Jane Street Capital — Jul. 2022 – Aug. 2022
Student – Academy of Math and Programming — *New York City, NY*
- Participated in the inaugural summer of AMP. AMP's rigorous curriculum focuses on computer science, combinatorics, and number theory, and prepares students for the challenges of STEM majors and careers.
- Designed and implemented artificial intelligence agents for mathematics-focused games, including Wordle and Quarto
- Created Wordle solver in Python using Shannon Entropy concepts with an average of 3.63 guesses and 1% failure rate

University of Illinois at Urbana-Champaign — Jun. 2021 – Sep. 2021
Research Intern — *Champaign, IL*
- Produced 4 case studies on significant financial events including the Barings Bank collapse and Subprime Mortgage Crisis
- Priced TSLA American options with Longstaff-Schwartz method and least-squares Monte Carlo simulation in Python
- Implemented Newton-Raphson method in Python to estimate underlying asset implied volatility with Black-Scholes model

Project/Leadership Experience

Duke Vex Robotics Team | *Head of Software & App Development* | C++, PyTorch, sklearn — Sep. 2023 –
- Implemented VSLAM and nonlinear feedback controller to optimize autonomous localization, increasing score by 150%
- Used PyTorch/sklearn to analyze competition data of 200+ matches to predict match outcomes for optimal strategy

Singularity Capital | *Quantitative Researcher* | React, AWS Amplify, Pandas, TensorFlow, SciPy — Jan. 2023 –
- Worked on back-testing and portfolio analytics dashboard in React and AWS Amplify to view and test trading strategies
- Designed cryptocurrency triangle arbitrage strategy using Kalman filter identification in Binance exchange data
- Trained hidden Markov Model for equity trading algorithm utilizing multiple factor models for economic regime change

Cornell Trading Competition | *Team Captain* | Pandas, SciPy, sklearn — Oct. 2022, Oct. 2023
- Implemented delta-neutral options algorithm and Markowitz portfolio strategy to place 1st in 2022 Competition
- Used GARCH Model for high-frequency trading algorithm in cryptocurrency case, placing 5th in the 2023 Competition

Mutual Investment Club of Cornell | *Real Estate Sector Head – L/S Equity* — Sep. 2022 – May 2023
- Led team of 6 students to source and analyze 20+ equities with fundamental and quantitative (quantamental) methods
- Pitched NYSE: COLD based on analysis of REIT industry, resulting in 20% return on investment for $100,000 portfolio

Skills and Interests

Languages: *Proficient*: Java, Python (Pandas, SciPy, TensorFlow, sklearn), R, SQL; *Introductory*: C++, Solidity, React
Technologies: Power BI, LaTeX, AWS, Azure, Excel, PowerPoint, Premiere Pro, Illustrator, Android Studio, Solidworks
Interests: Chess, Formula One, Premier League, Satirical Films, Graphic Design, Table Tennis, Golf, Personal Fitness