Edward Zhang

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EDUCATION

DUKE UNIVERSITY — **Durham, NC**

A.B. in Mathematics — Expected Graduation May 2026

B.S. in Computer Science — GPA: N/A

Minor: Finance | **Coursework:** Probability, Mathematical Finance, Practical Financial Markets, Conjecture & Proofs

CORNELL UNIVERSITY — **Ithaca, NY**

Candidate for B.S. in Applied Economics and Management — Transferred to Duke in May 2023

Intended Minors: Computer Science, Mathematics — GPA: 4.155

Coursework: Multivariable Calculus, Linear Algebra, Object-Oriented Programming and Data Structures

PROFESSIONAL EXPERIENCE

CATERPILLAR, INC. — **Peoria, IL**

Data Science Intern – Finance Services Division — May 2023 – August 2023

- Developing neural network and Naïve-Bayes algorithm for invoice classification to reduce timeframe by 50%
- Forecasted incoming supplier volume using GARCH model for more efficient contract turnaround time year-round
- Designed full-stack web app for contract type selection, reducing new supplier onboarding time by 30%

DYAD — **San Francisco, CA**

Software Engineer Intern, Quantitative Analyst Intern — August 2022 – December 2022

- Utilized Monte Carlo simulations to design protocol algorithms for $DYAD, a stablecoin and DeFi staking protocol
- Constructed models to forecast underlying blockchain asset implied volatility with 1000+ $DYAD transactions
- Developed SDK and smart contracts for composing protocols using optimization for 80% reduction in gas fees

JANE STREET CAPITAL — **New York City, NY**

Student – Academy of Mathematics and Programming — July 2022 – August 2022

- Selected from 300+ applicants; took classes in computer science, number theory, and probability & statistics
- Utilized PID controller to create an algorithmic trading bot ranked #2 in the AMP Electronic Trading Competition
- Created Wordle solver using Shannon Entropy concepts with an average of 3.63 guesses and <1% failure rate

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN — **Champaign, IL**

Financial Engineering Research Intern – Grainger College of Engineering — June 2021 – September 2021

- Produced 4 case studies on significant financial events including the Barings Bank collapse and Louisiana Purchase
- Generated optimal portfolio selection with team of 4 students using mean-variance analysis of 2 years' NASDAQ data
- Coded and tested Black-Scholes and binomial models to price TSLA options from 2020 in Python and Java

LEADERSHIP EXPERIENCE

SINGULARITY CAPITAL — **Chicago, IL**

Founder, Director of Research — January 2023 – May 2023

- Created proprietary back-testing and portfolio analytics dashboard with MERN stack to manage fund's $15,000 AUM
- Designed blockchain triangle arbitrage strategy using Kalman filter identification in real-time Binance exchange data
- Trained hidden Markov Model for equity trading algorithm utilizing multiple factor models (CAPM, Fama-French, APT)

CORNELL QUANT FUND — **Ithaca, NY**

Director – Derivatives Desk, Quantitative Analyst – Blockchain Desk — September 2022 – May 2023

- Selected from 150+ applicants; participated in 10-week education program in financial assets and trading strategies
- Implemented delta-hedging options strategy to win the Cornell Trading Competition against 20 teams from 12 schools
- Developed correlation trading algorithm for 20 small-cap cryptocurrencies using sentiment analysis of Twitter posts

SKILLS & INTERESTS

Languages: *Proficient:* Python, Java, Solidity, AMPL, LaTeX; *Introductory:* OCaml, Vyper, JavaScript, C++, Kotlin

Libraries and Tools: *Proficient:* Ramsete, OpenCV, StochPy, Gurobi, Overleaf; *Introductory:* React, Node, MongoDB

Applications: Solidworks, Autodesk Inventor, Fusion 360, MS Office, Adobe (Illustrator, Premiere Pro, After Effects)

Interests: Chess, Formula One, Premier League, Satirical Films, Graphic Design, Table Tennis, Golf, Fitness, Poker