Erik Nielsen

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Education

University of Michigan *B.S.E. in Computer Science, B.B.A. in Business Administration* Expected: May 2026
GPA: *3.92 / 4.00*
CS Coursework: Data Structures & Algorithms, Computer Organization, Theory of Computation, Discrete Math
Mathematics Coursework: Calculus I-IV, Computational Linear Algebra, Probability, Analytics and Statistics

Experience

JANE STREET CAPITAL, LLC **NEW YORK, NY**
Software Engineering Fellow June 2024 – August 2024
• Chosen as 1 of 14 for an 8-week fellowship in NYC with an intensive OCaml bootcamp and complex final project
• Optimized bot that traded ADRs, ETFs, and Bonds on a mock exchange, using hedging and position limits to minimize risk
• Practiced and applied writing design docs, rigorous code review sessions, and maintaining well-documented codebase
• Coded projects involving web scraping, RPCs, minimax strategy, computer vision, sentiment analysis, and concurrency

FLOW TRADERS **NEW YORK, NY**
Trading Business Course Trader April 2024 – May 2024
• Placed 2nd in Python bot trading competition using ETF arbitrage, market-making, and pairs trading strategies
• Practiced team software development by planning debugging sessions, conveying strategies, and maintaining Github repo
• Engaged in trading strategy, exchange orders, ETF fundamentals, market making, and volatility exercises by Flow Traders

TRADERS AT MICHIGAN **ANN ARBOR, MI**
Vice President of Trading January 2024 – Present
• Developed curriculum for members to learn trading fundamentals, probability, financial mathematics, and market-making
• Collaborated with club leadership to plan, facilitate, and get sponsors for nationwide poker and trading competitions

AI4ALL **SAN FRANSISCO, CA**
Ignite Artificial Intelligence Fellow August 2024 - Present
• Immersed in AI with focus on unsupervised learning through weekly classes, discussions, mock interviews, and group work
• Working on AI portfolio project that analyzes and societal problem with big data, which will be presented to AI experts

WORLDQUANT **OLD GREENWICH, CT**
Quantitative Research Consultant May 2024 - Present
• Used fundamental, news, volume, and price data to create 15+ alphas with sharpe > 1.25 back tested over past 5 years
• Ranked top 1% of users on BRAIN platform and advanced to National Championship of International Quant Championship

Projects

Stock Sentiment Analysis Dashboard | *OCaml, Python, Vader NLTK, Async, Parallel Computing, Linear Regression, APIs, GUI*
• Created interactive GUI that gets news, price, and volume data for given ticker over input time period and uses NLTK to create sentiment score for each day, which is used to plot the data on graph and create best-fit linear regression equation
• Enabled code to join earnings call livestream and concurrently transcribe audio, calculate sentiment, and plot continuously

Machine Learning Post Categorizer | *C++, Natural Language Processing, Conditional Probability, Binary Search Trees, Maps*
• Automatically identify the subject of various posts using natural language processing and machine learning techniques
• Trained program with CSV data using "bag of words" model, maps with underlying BST, and conditional probability

Multivariable General Equilibrium Model of Mass Transportation Systems | *Multivariable Calculus, Economics, Optimization*
• Estimated the amount of trains/buses and pricing needed throughout the day using supply, demand, and profit equations
• Presented new pricing model for mass transport in NYC using multivariable economic optimization model to PhD students

Skills

Languages: Python, C++, C, OCaml, Julia, Java, HTML/CSS, SQL
Technologies: Github, Jupyter Notebook, VSCode, Braze SDK, Pandas, NumPy, Valgrind
Certifications: *FINRA* - SIE | *CAIA* - Fundamentals of Alt Investments | *Bloomberg* - Market Concepts | *Akuna* - Options 101