Gabriel True

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EDUCATION

The University of Chicago Chicago, IL
BA in Computer Science and Economics Expected, June 2025
Computer Science Specialization: Machine Learning
Economics Specialization: Data Science

Western Hills High School Frankfort, KY
Honors: Perfect ACT Score, National Merit Scholar, National Beta Science Champion (2020) June, 2021

EXPERIENCE

Quant Analyst Intern | Shepherd Ventures March 2024 - Present

- Altered the K-means clustering process to attain a deterministic machine learning model used in asset preselection, increasing portfolio protection rate from 30.8% to 35.8%
- Implemented GARCH Models, Modern Portfolio Theory, and other financial techniques to optimize portfolio weighting
- Backtested novel quant models, distributed to team through Jupyter Notebooks, and presented finding to managing director
- Researched new machine learning techniques and mathematical techniques such as principal component analysis to analyze public financial data in new ways.
- Received recognition as quickest intern to attain competency in standardized intern training out of a team of 20 interns

Quantitative Developer Intern | AlphaOcean March 2024 - June 2024

- Applied linear programming techniques in Python via the PuLP library to deduce past fueling allocations given regulation constraints
- Performed Monte Carlo simulations in Python to advise companies on optimal fueling habits for oceanic vessels
- Analyzed company data using time series analysis, econometric techniques, and standard data science techniques to create forecasts and presented them to the CEO and CTO
- Suggested a new data visualization technique to the CEO emphasizing the utility of AlphaOcean's services to clients, which was quickly adopted and implemented in client-side deliverables.

Student Technological Assistant | University of Chicago Department of Physics October 2022 - October 2023

- Maintained, managed, and updated the Department of Physics' website using both a proprietary environment and HTML
- Utilized PowerBI and Microsoft Excel to visualize and present user activity on the website
- Met with department heads and professors to design or alter over 100 profiles added to the website

Strategic Partnerships Intern | TechSoup Global May 2022 - October 2022

- Conducted interviews with corporate partners, assessed official reports, viewed internal company data on PowerBI, and performed a literature review using scholarly databases to understand trends in CSR and ESG initiatives and reporting

PROJECTS

Financial Modeling Project | Financial Econometrics Course 2024

- Utilized EViews software in conjunction with ARMA Models, GARCH Models, VAR Models, Realized Volatility, and MPT to design stock portfolios
- Assessed quality of the models using statistical techniques such as AIC, BIC, Adjusted R-Squared, & Jarque-Bera testing

Volume Renderer | Scientific Visualization Course 2024

- Designed and implemented a 3D image processing tool in C to handle .nrrd files containing over 100,000,000 data points
- Applied Parallel Computing techniques (pthreads) in C to enhance processing speed and efficiency
- Simulated shading using mathematical techniques such as vector calculus, convolution, and linear algebra

Housing Pricing Modeling | IBM Data Science Certification 2023

- Predicted zipcodes of California houses through K-means clustering using data on pricing, bedrooms, bathrooms, etc.
- Processed data and visualized results using the Pandas, Numpy, SciPy, Folium, Scikit-Learn and Matplotlib libraries

RELEVANT COURSEWORK/SKILLS

Courses: Honors Combinatorics, Calculus II & III, Time Series Analysis (Masters Course), Mathematical Methods For Economic Analysis, Economic Analysis I, II, & III, Intro to Computer Science I & II, Computer Systems, Discrete Mathematics, Algorithms, Scientific Visualization, Statistics, Linear Algebra, Econometrics, Financial Econometrics

Skills: Python (Pandas, Numpy, Scikit-learn, Scipy, Matplotlib, Pulp, Monaco), R, C, Financial Modeling, K-means Clustering, Microsoft Suite, PowerBI, HTML, CSS, Javascript, SQL, Bash, Git, Data Structures, MacOS, Linux, Linear Programming, EViews