Aditya Dhanraj

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Education

University of Texas at Austin Austin, TX
Bachelor of Science in Computer Science *May 2027*

- SAT: 1580
- Coursework: Data Structures, Multivariable Calculus, Linear Algebra, Intro to Prob. & Statistics, Microeconomics
- Student Organizations: University Finance Association, UTexas Energy, Machine Learning & Data Science

Experience

Incoming Undergraduate Research Assistant Jan. 2025 – Present
University of Texas at Austin — Market Research, Commodities, Time-Series, Python, Bloomberg *Austin, TX*

- Collaborating with Dr. Travis Johnson to develop a VIX Term Structure and a commodities forecasting model by:
  - Collecting, cleaning, and evaluating historical VIX futures data in Python to model market volatility over time
  - Extracting and preparing daily time-series data from Bloomberg Terminal (e.g., SPGCBRP, CO1 Comdty, CO2 Comdty, CO3 Comdty) to forecast price movements and market volatility with Python

Investment Associate & Generalist Industry Head Sept. 2024 – Present
University Finance Association — Accounting, Valuation Modeling, Excel, Market Research *Austin, TX*

- Mentoring three analysts by providing guidance on accounting principles, valuation techniques, and market dynamics
- Leading the Generalist Industry Group in analyzing multiple sectors simultaneously and building stock pitches with DCF models and comparative sector analysis
- Selected as the sole first-year student for the 2024-2025 Investment Associates Program

Equity Research Analyst Intern Oct. 2024 – Dec. 2024
Westlake Securities — Valuation, Equities, Excel, Market Research *Austin, TX*

- Developed in-depth equity research reports while collaborating with the Westlake Securities investment banking team
- Constructed and assessed company valuations and comprehensive market and industry analyses incorporating both domestic and global economic factors

Projects

Upcoming: Computational Stock Price Model — *Statistical Modeling, Equities* Jan. 2025 – Present

- Joining Dr. Thaleia Zariphopoulou in utilizing Mathematica and stochastic processes to compute an expression involving the Moment Generating Function (MGF) for modeling the drift and volatility of stock prices

Financial Market Monitor — *Market Research, Equities* Sept. 2024 – Present

- Composing comprehensive, periodic market reports that cover domestic and international economic conditions, including key financial data, earnings reports, geopolitical events, and significant mergers/acquisitions
- https://financialmarketmonitor.github.io/

Algorithmic Trading Bot — *Python, PineScript, Statistics, Equities, Forex, Crypto* Oct. 2024 – Dec. 2024

- Constructed a mid-frequency indicator-based strategy that, through backtesting:
  - Yielded a 32.59% return on XAU/USD (1 Hour) from Jan 4, 2024 to Dec 27, 2024, outperformed its buy-and-hold return by 4.52%, and delivered a Sharpe ratio of 0.952 and a Sortino ratio of 6.69
  - Achieved a 57.26% win rate, 1.824 profit factor, and a maximum drawdown of 5.84%
- Utilized TradingView's Pine Script features to refine and backtest the strategy, built the program in Python, and explored other strategy ideas (e.g., momentum exploitation, shorting IV, pairs-based mean reversion, etc.)

Skills & Interests

Finance: Trading, Equities, Options, Commodities, Market Research, Valuation, Accounting, Excel, Bloomberg
Computer Science: Java, Python, HTML, CSS, JS, NumPy, Pandas, Eclipse, PyCharm, Mathematica, AI / ML
Mathematics: Regression & Time-Series Analysis, Regime Modeling, Linear Algebra, Stochastic Processes, Statistics
Other: Spanish, Hindi, Football (12 Years), Piano (12 Years), ANSYS Fluent, AutoCAD, Poker