

# 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

### 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

### Computational Stock Price Model — *Mathematica, 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, R, C, HTML, CSS, JS, NumPy, Pandas, Linux, Eclipse, PyCharm, Mathematica

**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