

# Uday Talwar

(646)884-0499 | udaytyketalwar@gmail.com | udaytalwar@math.arizona.edu

linkedin.com/in/uday-talwar | github.com/ta1war

## EDUCATION

---

### University of Arizona

*Ph.D. in Statistics*

Tucson, AZ

*May 2028 (expected)*

### Stony Brook University, 3.92/4.00

*M.S. in Applied Mathematics and Statistics (Graduated with Department Honors)*

Stony Brook, NY

*May 2023*

*Advanced Graduate Certificate in Quantitative Finance*

### University of Delhi, 3.56/4.00

*Bachelor of Arts in Economics with Honors*

Delhi, India

*May 2017*

## TECHNICAL SKILLS AND COURSEWORK

---

**Languages:** Python, Mathematica, R, MATLAB, L<sup>A</sup>T<sub>E</sub>X, SQL, C++ (beginner)

**Software:** MS Excel, MS PowerPoint, Pandas, NumPy, SciPy, statsmodels, Tableau, STATA

**Industry Tools:** Bloomberg Terminal, Morningstar Database

**Coursework:** Statistical Machine Learning, Probability Theory, Linear Algebra, Dynamic Programming, Stochastic Models, Linear Programming, Simulation and Modeling, Risk Measures for Finance and Data Analysis, Capital Markets and Portfolio Theory, Computing, Econometrics

## EXPERIENCE

---

### Department of Mathematics, UofA | Teaching Assistant

*Aug 2023 - Present*

- **MATH112 - College Algebra:** I work as a TA for MATH112. My work includes grading homework, holding office hours and facilitating lectures.

### Syntax Data | Quantitative Intern

*Jun 2022 - May 2023*

- **Index Production:** Writing object oriented code in Python to automate data pipelines for backtesting. Optimizing algorithms to reduce execution time. Automating report production.
- **Index Development:** Establishing data pipelines, QA processes and automating calculation to develop new indices. Wrote a statistical analysis Python module to automate report generation of various metrics such as Max Drawdown, Sortino Ratios, Correlation Matrices and VaR. Building a factor modeling framework in Python.

### Client Associates | Associate - Asset Allocation

*Feb 2021 - Jul 2021*

- **Investment analysis:** Managing, building and expanding analytical tools in MS Excel to evaluate investment products.
- **Quantitative performance analysis and ranking:** Built an MS Excel workbook to analyze and rank 50+ funds on a monthly basis on metrics such as Sharpe Ratio, Sortino Ratio, Maximum Drawdown, Beta, Alpha, Rolling returns and others. Integrated with Bloomberg data files to automate and enable monthly updates (manual, every quarter prior to the template).

### Client Associates | Analyst - Asset Allocation

*Jan 2019 - Sep 2019*

- **Back-testing:** Back-tested investment strategies, structured products (typically market linked debentures) and valuation models for the firm.
- **Macroeconomic research:** Tracking macroeconomic indicators like CPI, PMI, Liquidity, Interest Rates, Yield Curves and others to gauge the position of financial markets in the broader backdrop of the economy.

### Client Associates | Client Executive and Portfolio Analyst

*Oct 2017 - Dec 2018*

- **Managing a practice of 35 clients** and provided investment advice, reviewed investment portfolios and designed portfolio asset allocations. Youngest employee to hold a client facing role.
- **Investment recommendations:** Wrote tailored investment recommendations for clients keeping in mind their asset allocations and risk profiles
- **Asset Allocation:** Collaborated with the team to prepare monthly performance reports and back-tested strategies to measure risk, return, Beta, Sharpe ratios and other metrics.
- **Analyst of the Half:** Award for the top performing analyst for the half-year (2017-18).

### India Development Foundation | Research Assistant

*Oct 2019 - Feb 2021*

- **Facebook Data for Good:** Facebook funded project that involved the analysis of mobility data. Analyzed over 1 million rows of movement data using Pandas and NumPy.
- **Epidemiological model:** Built and simulated in Python to model the spread of the coronavirus in India. To be used as a tool to estimate the economic impact.

## PROJECTS

---

### **Portfolio Optimization** | *Python, SciPy, Pandas, NumPy, Pandas Datareader* (Dec 2021)

- Portfolio optimizer that takes a list of company tickers as the input and returns optimal portfolio weights to the user.
- Uses SciPy's minimize method with the (negative) Sharpe ratio as the objective and weights as decision variables.
- The script was used to calculate optimal weights over a given window and then test out-of-sample performance.

### **Portfolio overlap** | *Python, Pandas* (March 2021)

- Python script that calculated a Portfolio Overlap Matrix for the firm's portfolio funds.
- A tool to promote diversification by adding/removing a fund from the firm's portfolio.

### **SEIR Epidemiological Model** | *Python, Pandas, NumPy, Matplotlib* (May 2020)

- Compartmental model to estimate the spread of COVID19.
- I generalized the model to n-subgroups based on age to estimate disease spread with different initial conditions for each age group.

## PERSONAL ADVANCEMENT

---

### **Complexity Explorer**

- Introduction to Dynamical Systems and Chaos (November 2019, 91%)

### **Coursera**

- Introduction to Ordinary Differential Equations (May 2020, 100%)
- Introduction to Mathematical Thinking (Mar 2020, 98%)
- Matrix Methods (Sept 2019, 97%)
- Introduction to Calculus (May 2019, 95%)
- Portfolio and Risk Management (Apr 2018, 94%)
- Portfolio Selection and Risk Management (Mar 2018, 95%)

### **edX**

- Linear Algebra - Foundations and Frontiers (Sept 2020)
- Introduction to Computer Science and Programming using Python (Jul 2019)