HARSH MISHRA

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EDUCATION

Columbia University, Fu Foundation School of Engineering and Applied Science   *New York, NY*
M.S. Financial Engineering   **Aug 2019 – Dec 2020**
Coursework: Discrete Time Modeling, Stochastic Models and Processes, Optimization Techniques, Algorithmic Trading, Monte-Carlo Simulation Methods, Continuous Time Asset Pricing, Statistical Analysis and Time Series Analysis, Deep Learning for Financial Engineering, AI Models for Finance, Applications Programming for Financial Engineering.

R V College of Engineering   *Bengaluru, India*
B.E. Computer Science and Engineering   **Jul 2015 – Jul 2019**

- Recipient of the second-best undergraduate thesis project on "Portfolio Optimization using Machine Learning"
- *Coursework: Object Oriented Programming in C++, Programming in C, Data Structures and Algorithms, Discrete Mathematics, Probability, Statistics and Queuing Theory, High Performance Computing.*

EXPERIENCE

FlexStone Partners   *New York, NY*
Quantitative Research Intern   **May 2020-Aug 2020**

- Analyzed mutual fund holding data and generated features for predictive models for mutual fund performance.
- Compared traditional and deep-learning based asset allocation for 10000 mutual funds.
- Compared multiple objective functions including combinations of Sharpe ratio, Calmar ratio and Maximum drawdown.

Nvidia Graphics Pvt. Ltd.   *Bengaluru, India*
Software Engineering Intern   **Mar 2019 – Jun 2019**

- Developed code for the thermal regulation driver for self-driving cars.
- Wrote scalable code in C and C++ that was incorporated in Nvidia's autonomous vehicles module.
- Optimized the existing codebase to be compliant with MISRA regulations, effectively reducing 3500 violations and improving build efficiency by over 30%.

Evermore Stock Brokers Pvt. Ltd.   *Gurgaon, India*
Algorithmic Trading Intern   **May 2017 – Jul 2017**

- Developed trading strategies on the firm's proprietary platform to generate trades based on technical indicators.
- Generated strategies to hedge equity portfolios with options and back-tested them on data.

PROJECTS

Estimating Cross-Market Security Impact and Reducing Associated Costs   **Sep 2019 – Nov 2019**

- Calculated cost of execution based on cross-market impact for index-based strategies.
- Developed and programmed execution strategy for offloading/onboarding large holdings positions that improved upon separable VWAP by 2X.

Portfolio Optimization Using Machine Learning   **Jan 2019 - Apr 2019**

- Generated an initial portfolio of equities and fixed income instruments and optimized it over time using machine learning methods including Random Forests, Support Vector Regression and clustering.
- Outperformed the S&P 500 by an average of 20% each year with minimal drawdown.

SKILLS and INTERESTS

- Programming in C, C++ (including multithreaded) in Linux and Unix environments, Python, SQL, R.
- Machine Learning and Deep Learning using Python, Big Data and Parallel Processing using HPCC Systems.
- MS Excel with VBA, Scripting in Bash for Linux and Version Control using Git.
- Participating in Poker Tournaments, playing strategy-based games like Clash Royale and playing the guitar.