Pratim Chowdhary

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Education / Skills

Dartmouth College Hanover, NH

M.S in Computer Science; **Major GPA: 4.00/4.00** *Jan 2024 – June 2026*

- **Graduate Coursework:** Randomized Algorithms, Machine Learning & Statistical Analysis, Advanced Game Theory, Statistical Learning and Inference, Machine Learning Theory, Deep Learning, Applied Cryptography

B.A in Computer Science & Applied Mathematics Minor; **Major GPA: 3.95/4.00 (Honors List)** *Sep 2021 – June 2024*

- **Teaching Assistant:** CS30: Discrete Mathematics, CS31: Algorithms Analysis, MT60: Probability Theory (Honors)

Professional Experience

Jump Trading Group Chicago, IL

Incoming Quantitative Research Intern *June 2025 – Aug 2025*

Susquehanna International Group (SIG) Philadelphia, PA

Quantitative Trading Intern *June 2024 – Aug 2024*

- Intern on Index Volatility Desk: Conducting research on modeling DIA forward implied volatility through time series analysis, deriving features and employing linear regression, random forests, PCA, etc to generate alpha signals
- Extensive classwork in financial theory including options pricing, game / decision theory, mock trading and forecasting

Susquehanna International Group (SIG) Philadelphia, PA

Software Engineer Intern *June 2023 – Aug 2023*

- Built high performance computing extensions for Riptable library, using parallelization and vectorization in C++ to speed up computations on large datasets, reducing processing times by up to 80% for quantitative analysis
- Conducted quantitative research on Crypto trading, specifically mean reversion / statistical arbitrage, by analyzing historical data to build correlated signals, eventually building market making algorithm for intern trading competition

Advantage Capital Hanover, NH

Machine Learning Engineer *Jan 2022 – Mar 2022*

- Developed a predictive model to forecast loan default rates for Advantage Capital on a dataset of over 500,000 loans.
- Employed statistical analysis, PCA for dimensionality reduction, and various regression models - SVM, Random Forest and Logistic Regression - eventually achieving 91% accuracy in forecasting defaults

Research Experience

LISPLAB Under Prof. Peter Chin | *Anomaly Detection on Spacio-Temporal Problems*

- Conducting anomaly detection research on graph-encoded spatial networks using PCA to generate variance from movement patterns and Gassian Processes to model spatial-temporal data with Isolation Forests for anomaly detection

DSAIL Lab Under Prof. Soroush Vosoughi | *Explanability of Large Language Models*

- Developed a MLP regression model fine-tuned on the Stereoset to quantify stereotype intensity on prompts, to analyze the effects of sentiment/emotion manipulation on stereotype reinforcement in pretrained language model outputs

Publications

- **Deciphering Stereotypes in Pre-Trained Language Models** by Weicheng Ma, Henry Jackson Scheible, Brian C Wang, Goutham Veeramachaneni, **Pratim Chowdhary**, Alan Sun, Lili Wang, Diyi Yang, Soroush Vosoughi. 2023. 8 Pages. EMNLP Conference [Ethics in NLP]

Selected Projects

BART Data Challenge (Python & Statistical Analysis) | *Citadel Northeast Datathon 2023*

- Competed in Citadel Datathon with under 100 accepted students and conducted novel research, using data-driven graph optimization algorithms to reduce congestion and fares by up to 10% along BART train lines (based on simulations)

Project Euler (C++ & Python) | *Solved Collection of Challenging Mathematical / Computational Problems*

- Used dynamic programming, graph theory, linear algebra, probability theory, combinatorics, calculus, etc to solve 50+ computational mathematics problems with highest difficulty problems having under 250 accepted solutions