

SHAYAN CHOUDHURY

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EDUCATION

The University of Chicago

Chicago, IL

Master of Science in Financial Mathematics

Expected December 2025

- Courses: Portfolio Theory & Risk Management, Python, Option Pricing, Probability & Stochastic Processes

Birla Institute of Technology and Science, Pilani

Pilani, Rajasthan

Bachelor of Engineering in Chemical Engineering

September 2020

- Courses: Applied Stochastic Process, Partial Differential Equations, Neural Networks & Fuzzy Logic, Multivariable Calculus, Probability & Statistics, Derivatives & Risk Management

SKILLS

Computing: Python, SQL, Snowflake, MATLAB, Java, Unix, Airflow, Github, Spacy, Scikit-learn, AWS Services, MS Office

Knowledge: Financial Markets, Machine Learning, Factor Research, NLP, Portfolio Management, Statistical Modeling

Trading Products: Equities, Fixed Income, Options, Futures

EXPERIENCE

BlackRock

Mumbai, India

AlphaGen Technology, Quant Engineer Associate

May 2023 – July 2024

- Achieved 30% improvement in efficacy of model used for trading by Securities Lending business; enhanced Java model application through addition of dataset, noise-filtering steps and automated execution with Unix Bash scripts and Airflow
- Implemented 2 active Sustainability Investing strategies involving exponential smoothing, size-factor neutralization and cross-sectional standardization; productionized signal lifecycle from data ingestion to execution with Python and Airflow

Morningstar Inc.

Mumbai, India

Quant Research Team, Quantitative Analyst

January 2022 – May 2023

- **Thematic Tagging of Companies:** Researched and developed python package for tagging companies to thematic baskets using revenue information, corporate filings, public news and fund holdings for ~10000 companies and ~25 themes
- Improved data fetch process through multithreading in python resulting in 20x efficiency; implemented back-testing, alpha analysis module in Python to generate Returns, Information Coefficient, Turnover, Fama French attribution analysis
- **News Sentiment Factor Research:** Constructed news sentiment factor strategy with top quantile generating Sharpe ratio of ~1 for 7 day holding period and mean Information Coefficient of 0.05 on Alexandria News Sentiment Dataset
- News sentiment factor constructed on Russell 1000 universe through log transformation and exponential weighting showed negligible correlation to all other style factors and improved R-squared measure by 1.5%
- **Generation of Analyst Reports using LLMs:** Built a POC model for converting analyst short notes into reports by fine-tuning NLP based LLM models Google T5 and Facebook BART on 4000 analyst samples and achieved 0.4 BLEU score

Morningstar Inc.

Mumbai, India

New Product Development Indexes, Associate Quantitative Analyst

August 2020 – December 2021

- Constructed and launched Global Corporate Bond Sustainability Index Series that provides exposure to best-in-class ESG bonds within each credit, duration and sector buckets of parent index
- Researched and launched Global ex-Fossil Fuels Index that provides exposure to companies without Thermal Coal, Oil and Gas power generation involvement; developed NPD Fixed Income back-testing module in Python

RESEARCH

Automated ML Momentum StatArb Trading Strategy

June 2021 – April 2022

- Constructed & deployed strategy of 1.3 Sharpe and 39% CAGR in Indian markets trained using Random Forest model
- Conducted feature engineering to create 30 momentum factors and chose top 10 stocks for trading with 2-d holding period
- Automated trade placement & execution with Selenium and BeautifulSoup4 libraries using Python and AWS Services

Sharpe Maximization Optimization on NIFTY50 Universe

November 2023 – December 2023

- Achieved a 6% CAGR premium on NIFTY50 ETF with a Sharpe of 1.31 by constraining weights to 15% as in benchmark
- Implemented configuration driven back-testing module and optimizer module in Python and using CVXPY library

ADDITIONAL INFORMATION

Languages: Bengali (fluent), Hindi (fluent)

Interests: Blues and Rock Music, Guitar, Football, Mentorship

Certifications: CFA Level 1, Google Cloud Big Data and Machine Learning Fundamentals, Deep Learning A-Z

Extracurricular: Coordinator, Department of Lights, BITS Pilani – Managed 5 people for Technology fest Apogee, 2019