HARSH KULKARNI

hsk8183@nyu.edu | (929) 743-2838 | https://www.linkedin.com/in/harsh-kulkarni-b696651b1/

EDUCATION

NEW YORK UNIVERSITY, TANDON SCHOOL OF ENGINEERING Brooklyn, NY
Master of Science in Financial Engineering Expected 05/26

SRM INSTITUTE OF SCIENCE AND TECHNOLOGY Chennai, India
Bachelor of Technology in Computer Science and Engineering 05/23

TECHNICAL SKILLS & CERTIFICATIONS

- **Skills:** Python, Javascript, C++, Typescript, MATLAB, SQL, MongoDB
- **Certifications:** Machine Learning with Matlab - Stanford

COURSEWORK HIGHLIGHTS

- **Math:** Advanced Calculus and Complex Analysis, Probability Theory, Stochastic Calculus and Option Pricing
- **Programming:** Machine Learning in Finance, Computational Finance, Data Structures and Algorithms, Object oriented Programming, Database Management Systems, Algorithmic Portfolio Management
- **Finance:** Derivative Securities, Quantitative Methods in Finance, Statistical Arbitrage, Hedge Fund Strategies, Valuation for Financial Engineering

EXPERIENCE

ACCENTURE, Pune, India 11/23 - 07/24
Packaged App Development Associate

- Charged with maintaining and developing endpoints across multiple back end repositories, worked with NodeJS
- Developed and deployed high-quality front-end solutions in Angular, adhering to client specifications and ensuring production readiness. Worked to optimize load times across pages leading to a 50% improvement
- Allocated one week each month to provide dedicated backend and frontend support, addressed client issues through deployment of hotfixes. Managed and resolved multiple support tickets daily during these periods

KYRO, Chennai, India 03/22 - 06/23
Software Development Engineer

- Built and debugged a project management web application tailored for construction companies, utilizing a FastAPI (Python) backend, and integrated with Microsoft Azure Cloud Services
- Engineered independent micro-services including a location-data module for geospatial functionality and a bulk-import service supporting efficient high-volume project upserts
- Designed and deployed a project/sub-project scheduling service leveraging a queue-based traversal algorithm to propagate date changes across complex dependency graphs, ensuring consistency as hierarchies scaled
- Charged with redesigning authentication flow using Auth0 and JWTs to support a multi-tenant architecture in Python
- Reviewed pull requests daily across a large, multi-service codebase to enforce clean-code standards

RESEARCH & ACADEMIC PROJECTS

- **Virtual Marketplace Liquidity Modelling and Data Analysis:** Built a quantitative trading analytics platform for a large-scale virtual economy, integrating REST API order-book data into Python pipelines with Pandas/Numpy. Reconstructed daily trade volumes from hourly rolling snapshots, applied robust rate estimators and Poisson models to assess liquidity, exit-time probabilities, and ROI. Implemented a custom transaction log to track flips and realized P&L, and automated Excel reports, ranking opportunities by profitability and execution risk
- **Monte Carlo Simulations for Options:** Leveraged the Monte Carlo simulation method to price basket, Asian and Bermudan options, applied variance reduction techniques including using a control variate, modeled geometric brownian motion paths and estimated payoffs under risk neutral measures in C++ and Python
- **Portfolio Return Analysis using Earnings Surprises:** Led a team of 5 in designing and engineering a C++ pipeline to compute earnings surprises for the Russell 3000 index, classifying firms into Beat/Meet/Miss groups and analyzing abnormal/cumulative abnormal returns around earnings dates; implemented multithreading in data-fetching module, improving throughput by 3×
- **Valuation Factor Predictive Power in EM vs DM:** Evaluated alpha potential of valuation metrics across Emerging and Developed Markets, ran quarterly Fama-Macbeth regressions and validated using Welch's t-tests in Python. Found higher factor relevance in DM as compared with EM

EXTRACURRICULAR

- **Volunteer Staff, ICAIF 2024** – Assisted with conference operations and engaged with researchers presenting advances in machine learning for trading and risk management