Sayash Raaj Hiraou

sayash@berkeley.edu | linkedin.com/in/sayashraaj

Education

University of California, Berkeley – Haas School of Business — **Berkeley, USA**
Master of Financial Engineering (MFE Merit Scholarship) — *Expected Jan 2028*

Indian Institute of Technology (IIT) Madras — **Chennai, India**
Bachelor of Technology, Civil Engineering (Class Rank: 2/115 | 3.83/4 US GPA) — *Apr 2023*

Scholarships: Kalidas (sole awardee), OPJEMS (top 3 students)

Skills & Certifications

Certifications: CFA Level I – Passed
Programming: Python, C++, R, SQL
Libraries & Tools: NumPy, Pandas, PyTorch, Scikit-learn, statsmodels, Snowflake, Gurobi, CPLEX
Quantitative Methods: Linear/Convex Optimization, Dynamic Programming, Monte Carlo Simulation
Publications & Conferences: NeurIPS 2025 (arXiv:2407.18920), ICML 2026 (arXiv:2604.19914)

Professional Experience

BlackRock — **Mumbai, India**
Quantitative Portfolio Management, Index Equity — *Aug 2026 – Present*

- Partnered with **Index Equity PMs** to translate investment methodology and constraints into **Aladdin portfolio-management workflows**.
- Led **Munich ETF onboarding**, extending the existing US ETF order-generation workflow with **fund-specific basket construction and constraint checks**.
- Applied **constraint-based portfolio logic** to identify benchmark-tracking deviations and formulate proposed orders for PM review.

Fidelity Investments — **Bengaluru, India**
Lead, Financial Solutions, Quant Strategy — *Oct 2024 – August 2026*

- **Promoted to Lead within 14 months** – fastest promotion in the Financial Solutions Quant Strategy group; currently lead a 4-member quant/engineering team.
- Designed a multi-account, **tax-aware** asset-location optimizer supporting GAA (stock, bond, cash) using **stochastic simulation and convex optimization** (Python, Gurobi), improving lifetime tax efficiency by **12 bps**.
- Built a pre-Medicare healthcare cost model leveraging **Snowflake** pipelines and **10,000-scenario Monte Carlo** simulation (Python); reduced expected policy costs by **32%**.

Fidelity Investments — **Bengaluru, India**
Data Scientist, Research & Data — *Jul 2023 – Oct 2024*

- Developed a synthetic financial data generator using a **conditional deep learning model** with constraint enforcement. Achieved **95.16%** statistical fidelity, **3x** throughput, and reduced operational cost by **40%**.
- Built autonomous pipelines for detecting deterministic constraints across **1.2M+** records; reduced manual labeling time by **94%**.
- Executed **non-parametric statistical analysis** (Kolmogorov–Smirnov tests) to quantify ESG rating divergence, producing empirical quantitative research for internal portfolios.

Projects & Research

Indian Institute of Technology Madras — **India**
Railways Schedule Optimization (Thesis Document) – Awarded Maximum Grade — *Apr 2023*

- Designed a schedule-aware routing algorithm for Railways as a temporal variant of the Traveling Salesman Problem.
- Built a **time-expanded graph** with **dynamic programming and pruning heuristics**; tested on sampled timetable data and improved feasible scheduling with reduced makespan versus greedy baselines.

Fidelity Investments — **India**
NeurIPS'25 Workshop (Paper) – LLM Prompt Optimization — *Jul 2023 – Oct 2023*

- Built a hard-prompting pipeline for large language models integrating **constraint structures** into prompt design.
- Developed systematic prompt templates and evaluation harnesses to benchmark performance across constraints.

Achievements & Hackathons

- Hackathon wins: **1st** – Intel AI Global, Log9 Energython, EXL Intl; **2nd** – Cyient Intl; **3rd** – Shell AI Hackathon.

Interests: Strength training, motorcycling, solo travel