Heet Mehta

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EDUCATION

New York University, Tandon School of Engineering **Sep 2025 to May 2027**
Master of Science in Computer Science, ***GPA: 3.83/4.0*** *Brooklyn, NY*
Courses: Design & Analysis of Algorithms, Software Engineering, Machine Learning, Big Data

Vellore Institute of Technology **Sep 2021 to Jun 2025**
Bachelor of Technology in Information Technology, ***GPA: 9.14/10*** *Tamil Nadu, India*
Courses: Data Structures and Algorithms, Linear Algebra, Probability and Statistics, Numerical Methods, Operating Systems, Computer Networks, Artificial Intelligence, Cloud Computing

SKILLS

Languages : Python, C++, Java, Go, SQL, Bash, TypeScript
Algorithms and Systems : Algorithm Design, Distributed Systems, Real-Time Processing, Concurrency, Performance Optimization
Numerical and Analytical : NumPy, SciPy, Pandas, Statistical Modeling, Kalman Filtering, Signal Processing, PyTorch
Infrastructure : Linux, AWS, GCP, Kubernetes, Docker, Bazel, Kafka, Redis, ClickHouse, CI/CD
Practices : Clean and Efficient Code, Attention to Detail, Problem Solving, Code Reviews, Technical Documentation

EXPERIENCE

Intrinsic (AI Robotics, Google) | Software Engineering Intern **May 2025 to Aug 2025**

- Designed and built a real-time benchmarking system in Go to evaluate scalable backend infrastructure for a production robot fleet, systematically comparing Prometheus, VictoriaMetrics, Thanos, and Mimir under loads exceeding 782k time series with precise measurement of ingestion rate, memory behavior, and latency.
- Engineered a containerized load generator via Bazel deployed on Kubernetes with Helm, producing reproducible results across all configurations; applied strong attention to detail to ensure benchmark methodology was defensible and auditable by senior engineers.
- Delivered a structured technical report synthesizing quantitative findings that directly informed an infrastructure migration decision; worked independently while collaborating effectively with quants and senior developers throughout.

Bhabha Atomic Research Centre | Project Intern **Dec 2024 to May 2025**

- Applied numerical computing techniques in Python to fuse noisy sensor data from 500+ IoT devices using RSSI-based trilateration and Kalman filtering, achieving 1-meter indoor positioning accuracy under real-world interference conditions.
- Built multithreaded real-time data pipelines and automated simulation scripts to validate system behavior at scale, reducing evaluation time by 30% while maintaining correctness of statistical estimates.

Encardio Rite | Software Development Intern **May 2024 to Aug 2024**

- Built an ML-powered diagnostics system in Python using Scikit-learn on AWS Lambda, applying statistical anomaly detection across sensor streams from 20+ installations and reducing critical failures by 40%.
- Designed scalable data ingestion pipelines integrating multi-source sensor data via MQTT and AWS IoT Core; applied signal processing and feature engineering improving fault detection accuracy by 20%.

PROJECTS

SentryFlow: Real-Time API Analytics System | Python, FastAPI, Redis, Kafka, ClickHouse Link **2025**

- Designed and deployed a scalable real-time backend on AWS handling 1000+ daily API requests at sub-100ms latency; implemented token bucket and sliding window algorithms from first principles in Python with JWT authentication, Kafka-backed event ingestion, and ClickHouse for time-series analytics.
- Maintained 92% test coverage under concurrent load; profiled and optimized bottlenecks systematically before production, applying clean and efficient code practices throughout with structured code reviews.

Eco-Nexus: Multi-Agent Decision System | Python, Next.js, TypeScript, Node.js, Snowflake Link **2025**

- Built an agentic AI engine with explainable multi-variable scoring across 30+ inputs improving decision accuracy by 25%; designed for real-time state sync via Socket.io supporting 50+ concurrent sessions. Awarded 3rd Place at HackNYU 2026.

PUBLICATIONS

- Published *"Applications of Machine Learning in Detecting Unethical Sources of Raw Materials in Supply Chains in the Cosmetic Industry"* at **ICSES 2024, IEEE Xplore**. Link

LEADERSHIP & SOCIAL IMPACT

- **Volunteer Web Developer, Catchafire** Link — Led pro bono website redesign supporting workforce reintegration programs, improving navigation and accessibility for community impact.
- **Technical Team Lead, VIT Robotics Club** — Mentored 8 members across software and analytical projects, organized 5 technical workshops on algorithms and engineering fundamentals.