Dhruv Maheshwari

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Education

Manipal Institute of Technology July 2023 – Present
B.Tech in Computer and Communication Engineering — ***CGPA: 9.27/10.0***

Maheshwari Public School 2010 – 2022
Higher Secondary (12th CBSE) - ***91%***

Achievements

- Finalist in **JPMC Code for Good 2025 Hackathon** – Selected among top 50 teams from over 18,000+ students nationwide.
- National Semi-Finalist in **Flipkart GRiD 7.0** – focused on problem-solving, data structures and algorithms.

Experience

Management Committee Nov 2023 – May 2025
ESOM – Economics and Finance Society of Manipal

- Coordinated **5+** finance workshops reaching **150+** students, overseeing event logistics and speaker engagement to boost campus financial literacy.
- Synthesized research on macroeconomic trends into actionable insights for member-led discussions and educational resources.

Associate Nov 2023 – May 2024
E-Cell – Entrepreneurship Cell

- Supported planning and execution of entrepreneurship summit showcasing **12+** student-led ventures, streamlining schedules and participant coordination.
- Facilitated ideation workshops and networking sessions to strengthen the startup ecosystem on campus.

Projects

URL Monitor | *Django, PostgreSQL, Tailwind* June 2025

- Designed a distributed URL monitoring system tracking **uptime, HTTP status codes, and latency** via scheduled health checks.
- Implemented fault-tolerant scheduling with **retries, exception handling, structured logging**, and SMTP-based alerting.

NeuroQuant – Trading Backtester | *Python, FastAPI, PostgreSQL, NumPy/Pandas* November 2025

- Built an **event-driven backtesting engine** modeling market data ingestion, signal generation, order routing, executions, and portfolio state via a FIFO event queue.
- Simulated realistic execution with **bid–ask spreads, commissions, and square-root market impact.**
- Exposed portfolio state (**positions, cash, PnL, equity curve**) through a validated FastAPI backend.

Market Simulator / Order Book | *C++20, STL, CMake* December 2025

- Implemented a **price-time priority matching engine** using sorted vectors for price levels and FIFO linked lists per level.
- Achieved **O(1)** top-of-book access and **O(log n)** price-level insertion with cache-friendly contiguous storage.
- Built a multi-agent **market simulator** (market maker, momentum, mean-reversion, HFT, noise) to study market microstructure dynamics.

Technical Skills

Languages: Python, C, C++, Java, SQL, Bash, HTML, JavaScript
Frameworks/Tools: Django, Flask, FastAPI, Celery, Pandas, Numpy, Matplotlib, yfinance, Git, GitHub
Concepts: Data Structures, Algorithms, Object-Oriented Programming, Relational Databases, Computer Systems

Last updated: November 2025