Avnish Uba

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LinkedIn — GitHub

EDUCATION

International Institute of Information Technology Hyderabad — B.Tech CS + MS Computational Human Sciences
2024 — 2029
Hyderabad, India

PROJECTS

DutySecure — Privacy-First AI Roster Engine   *Personal Project — 2025*
Tech: Python, Flask, Llama-3.2 (Local LLM), Pandas — GitHub

- Engineered an offline AI engine using a local **Llama-3.2-1B** model to automate complex duty allocation from structural Excel rosters.
- Developed a **semantic header-parsing** architecture, enabling the LLM to autonomously identify roster columns regardless of naming variations.
- Implemented **offline inference** via `llama-cpp-python` to ensure 100% data privacy and zero leakage of sensitive PII.
- Packaged system as a standalone Windows executable managing its own model lifecycle and persistent storage.

FlowMax — Algorithmic Benchmarking Suite   *Oct 2025 — Dec 2025*
Tech: C++, Python, OpenCV — GitHub

- Implemented 6 advanced max-flow algorithms (Dinic, Push-Relabel, Hopcroft-Karp).
- Achieved a **1000x speedup** on grid graphs using the **Gap Heuristic** and **Boykov-Kolmogorov** algorithm.
- Optimized **Airline Scheduling** workflows, achieving a **33x efficiency gain** via bipartite matching.
- Engineered an interactive **Dashboard** for real-time performance telemetry and 30 FPS camera segmentation.

Stay Sharpe — ML Quant Framework   *Sep 2025 — Sep 2025*
Tech: Python, scikit-learn, pandas_ta — GitHub

- Awarded **2nd Place** in a 24-hour Quant Hackathon for a Random Forest ensemble model predicting directional market trends.
- Engineered high-dimensional features (RSI, MACD, OBV) and optimized model performance via **Grid Search** on unseen data.
- Prevented data leakage and forward bias by implementing a robust **chronological splitting** and execution delay pipeline.

POSITIONS OF RESPONSIBILITY

Team Member — Team Brahmand (Official IIITH CanSat Team) *Nov 2025 — Present*
Hyderabad, India

- Part of the **Electronics** and **Paraglider Engineering** team for the US CanSat 2026 Competition, developing a can-sized satellite for the "Paraglider Instrument Delivery" mission, focusing on sensor integration and flight structural stability.

Apex Mentor — IIIT Hyderabad   *Jun 2025 — Present*
Hyderabad, India

- Selected for the student-led mentoring body to facilitate the academic and campus-life transition of incoming students.
- Mentored student clusters and managed induction logistics to integrate newcomers into campus culture.

Undersecretary — Clubs Council, IIIT Hyderabad   *Jun 2025 — Present*
Hyderabad, India

- Managing cross-functional finance and event operations for all student clubs; optimized budget tracking and vendor payment workflows.

SKILLS

Languages
C ● C++ ● Python ● JS ● SQL
Frameworks / Tools

Flask ● FastAPI ● PyTorch
scikit-learn ● NumPy ● pandas
OpenCV ● Git ● Docker ● Linux
Databases

MySQL ● MongoDB

HONORS & AWARDS

2nd Place — Stay Sharpe   *Nov 2025*
Top performing ML-driven model on unseen data at Ctrl+Alpha @ IIITH.

Merit Certificate — IOQM   *Feb 2021*
Ranked in top 300 in Rajasthan Region for National Math Olympiad.

COURSEWORK

- Data Structures & Algorithms
- Algorithm Analysis & Design
- Automata Theory
- Database Design
- Digital Electronics
- Computer System Organisation
- Probability & Statistics
- Intro to Software Systems
- Linear Algebra
- Discrete Mathematics

INTERESTS

Quant/Algo Trading
Systems Programming
Local LLMs / Privacy AI