Ansh Shah

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Education

University of Illinois Urbana–Champaign — Champaign, IL
B.S. Mathematics & Computer Science; GPA: 3.86 — *Expected May 2028*

Honors: Full Tuition Scholarship (2025–2026); USACO Silver Division; American Computer Science League National Finalist
Coursework: Data Structures and Algorithms, Computer Architecture, High Frequency Trading Technology, Linear Algebra, Probability & Statistics

Experience

UIUC Financial Technology Lab — Jun. 2026 – Present
Student Researcher – GNSS Systems — *Chicago, IL*

- Automated u-blox GNSS receiver configuration, raw UBX capture, RINEX conversion, and Precise Point Positioning (PPP) post-processing to evaluate antenna-position estimates for timing infrastructure.
- Compared RTKLIB filtering configurations using epoch retention, position scatter, and formal uncertainty; analyzed a separate 10,032-epoch capture with PPP solutions throughout the run.

Future Leaders Initiative (Hack4Impact) — Jan. 2026 – May 2026
Software Engineer — *Champaign, IL*

- Developed features for FLI's deployed child-safety reporting platform, used to collect incident data for UNICEF aid efforts, with a Flutter app, React/TypeScript dashboard, and FastAPI/PostgreSQL backend.
- Built REST endpoints and a React analytics dashboard with keyword search, geographic filters covering 5 provinces and 210 chiefdoms, and interactive charts and tables.
- Implemented client-side media-metadata handling and a Hive-backed offline report queue screen; added Alembic database migrations to support the reporting workflow.

National Organization for Business and Engineering — Sep. 2025 – Dec. 2025
Software Engineer — *Urbana, IL*

- Built a student apparel marketplace with Next.js, MongoDB, and Vercel, implementing server-side rendering and API routes across more than 10 pages.
- Translated Figma prototypes into reusable Tailwind CSS components to standardize interfaces and consolidate duplicated UI code.

Projects

RF Classification and C++ Inference Benchmark | *PyTorch, ONNX Runtime, C++* — 2026

- Trained a 2.2M-parameter CNN to classify 24 radio modulation types, achieving approximately 92% held-out accuracy above +10 dB SNR and evaluating performance across −20 to +30 dB.
- Exported the model to ONNX Runtime and benchmarked 1,000 single-sample CPU inferences in C++: 775 μs mean and 1.7 ms p99 prediction latency, with all predicted classes matching PyTorch.
- Profiled inference stages and evaluated producer–consumer threading; found model execution consumed 99.7% of measured processing time and synchronization overhead outweighed preprocessing overlap.

NBA Player Performance Analytics | *Python, PostgreSQL, Streamlit* — 2025

- Built a player-performance estimation pipeline using exponentially weighted historical statistics with opponent, rest-day, and home/away adjustments; organized data in an eight-table PostgreSQL schema.
- Integrated NBA API data through rate-limited requests and database queries covering more than 600 players and 13 statistical categories for a Streamlit analytics application.

Technical Skills

Languages: Python, C++, Dart, Java, TypeScript, JavaScript
Frameworks/Libraries: React, Next.js, FastAPI, Flutter, PyTorch, ONNX Runtime, NumPy, Pandas
Databases/Tools: PostgreSQL, MongoDB, Git, Linux, Vercel, RTKLIB