

Yashas Bhat

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EDUCATION

University of Maryland

Bachelor of Science in Computer Science, Minor in Mathematics
GPA: 3.57/4.0

College Park, MD
Aug. 2023 – May 2027

TECHNICAL SKILLS

Languages: Python, Rust, TypeScript, JavaScript, Java, SQL (Postgres), C/C++, OCaml

Frameworks & Tools: FastAPI, Flask, Axum, Next.js, React, Node.js, Tokio, FastMCP, Typer, LlamaIndex, Chroma, Git, Docker, Linux/UNIX, AWS

EXPERIENCE

Children's National Hospital

August 2024 – May 2025

Student Developer

College Park, MD

- Architected [TrachSense](#), a real-time patient monitoring platform for airway alerts for tracheostomy patients, and led development of the backend system behind TrachHub.
- Designed the real-time data pipeline and WebSocket streaming layer from sensor ingestion through mobile delivery, reducing monitoring latency to **under 1 second**.
- Developed a breathing-pattern analysis engine using hysteresis, RMS, standard deviation, and flatline ratio thresholds to classify breathing states and reduce false alerts by **10%**.

Bharat Petroleum Corporation Limited

Dec. 2024 – Jan 2025

Software Engineering Intern

Mumbai, India

- Developed an anomaly detection framework combining DBSCAN clustering and Isolation Forest, **identifying 950+** potentially fraudulent distributors from **320K+** digital customer verification transactions and improving fraud detection accuracy over rule-based checks.
- Designed a feature extraction pipeline with **6** behavioral features, applying PCA visualization to surface irregular distributor behavior and weekday fraud trends for auditors.

Amazon Project Kuiper

Jan. 2024 – May 2024

Student Developer

College Park, MD

- Engineered **3** core APIs for [Amazon Project Kuiper](#), covering collision data message consensus, operator registration, and dynamic trust score management.
- Developed the FastAPI/PostgreSQL backend for a blockchain-integrated [Space Safety Visualizer](#), enabling real-time collision prediction for **10+** satellite operators on a **13**-engineer team.

PROJECTS & OPEN SOURCE

[Canvas MCP](#) | Python, FastMCP, Canvas API, Typer

July 2025

- Created an MCP server and CLI for Canvas LMS that lets AI clients query live course data and automate study workflows across assignments, discussions, files, grades, modules, and calendar events.
- Implemented **25+** Canvas tools, URL resolution, and course-context snapshots with Chrome-cookie, session-cookie, and API-token auth across MCP transports.

[Codexport](#) | Rust, Axum, Rusqlite, Comrak, Tokio

March 2026

- Developed a Rust CLI and local web app for browsing Codex chat history, rendering sessions as transcripts or clean Markdown, and exporting conversations for reuse and documentation.
- Added print-friendly PDF views and expiring share links through a Tailscale Funnel share server, turning chat history into portable artifacts.

[Testudot](#) | Python, FastAPI, Typer, BeautifulSoup, Docker

Dec. 2025

- Launched a Dockerized FastAPI service for monitoring UMD Testudo courses, persisting section state and sending HTML email alerts on schedule changes.
- Implemented automated detection for new sections, seat-availability changes, and removals, with local and Redis-backed persistence for local use and cloud deployment.

[Know](#) | Python, LlamaIndex, Chroma

Jan. 2026

- Created a local search CLI that watches directories, chunks **20+** file types, and stores a persistent Chroma index for semantic retrieval.
- Added incremental indexing, deduplication, and BM25/hybrid retrieval, cutting re-index time by **67%** from **5.7s** to **1.9s**.