

Ayaan Siddiqui

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EDUCATION

University of Virginia

B.S. in Computer Science and Mathematics; GPA: 4.0

Charlottesville, VA

Aug. 2024 – May 2028

EXPERIENCE

Axis Health

McLean, VA

Founding Engineer

May 2026 – Present (Part-Time)

- Sole engineer for an early-stage EHR startup targeting Bangladesh. Carried it from Figma prototype to investor-demoed TestFlight and Play Store betas: React/Vite web app, Expo client, Dockerized FastAPI backend on Railway. Every push runs all 17 Alembic migrations against a Postgres service container in GitHub Actions
- Built a clinical drug-safety engine across a 22.6K-medication formulary and 160K interaction pairs; it hard-blocks allergy contraindications and high-severity interactions at the point of prescription
- Shipped internationalization as one shared package for web, mobile, and server-rendered PDFs: 1,744 English/Bangla strings across 10 namespaces. Numerals switch independently of UI language, so dosages stay in Western digits
- Replaced per-keystroke sequential scans of that formulary with PostgreSQL trigram (`pg_trgm`) GIN indexes after leading-wildcard `ILIKE` defeated the B-tree index, and cut redundant reloads with thread-safe TTL caching
- Built the privacy and access controls over clinical data: k-anonymity suppression (k=11, per HHS/CMS convention) on every analytics export, an append-only audit log of record mutations, and JWT/JWKS verification behind role-based route guards

UVA Health, Department of Otolaryngology

Charlottesville, VA

Software Engineering Research Assistant

May 2026 – Present (Part-Time)

- Independently reviewed the governing IRB protocol and found a HIPAA blocker barring external sharing of patient photographs. Spent four months as sole technical liaison across UVA Research Computing, Health IT, and the department chair, and proposed the internal-only pivot that got hosting approved
- Built a FastAPI/SQLite database of 143 de-identified cases with multi-criteria filtering, an interactive anatomical region selector, and a spreadsheet validator the research team runs themselves before importing
- Routed all patient media through a server-side proxy with three path-traversal checks, extended PBKDF2-SHA256 session authentication to every data endpoint, and wrote the 16-page security review Health IT required before approving hosting

UVA School of Engineering and Applied Sciences

Charlottesville, VA

Undergraduate Teaching Assistant, Engineering Tutor

Aug. 2025 – Present

- Teach weekly office hours, 1:1 tutoring, and lab sections for 30+ students in systems programming; most of it is hands-on low-level debugging

PROJECTS

SmashSet | smashset.gg | TypeScript, React, Express, Postgres, GraphQL, OAuth

Aug. 2026 – Present

- Built a keyboard-driven reporting tool for Smash tournament organizers that cuts start.gg set entry from 15–20 seconds to 5–10; designed it as a TO myself and iterated between matches at two events. Now rolling it out to organizers at other locals
- Mirrored the character-icon layout TOs already know from start.gg; click and keybind input serve novice and expert alike, and invalid scores are blocked at entry, not on submit. An in-app tutorial replays four real reports keystroke by keystroke
- Wrote the start.gg OAuth 2.0 flow by hand — authorization-code exchange, concurrent-safe token refresh, AES-256-GCM encryption at rest — after their published example put the client secret in a front-channel redirect
- Traced a production outage to a hardcoded GraphQL cost assumption start.gg silently invalidated. Pagination now measures the real cost per row and resizes its own pages; a scheduled canary catches the next drift, and CI gates every deploy

Online Lesson Scheduling Platform | Django, PostgreSQL, AWS S3, OAuth

Jan. 2026 – May 2026

- Owned deployment as DevOps lead on a 5-person Scrum team over 6 sprints: Heroku release pipeline, Postgres provisioning, S3 static and media storage, Django migrations across dev and production. Also designed the lesson-lifecycle logic: capacity floors track confirmed enrollment, and the waitlist promotes automatically

RAG Evaluation Framework, LMI | LangChain, OpenAI, ChromaDB, DeepEval, Streamlit

Nov. 2024 – June 2025

- Implemented the DeepEval LLM-as-judge scoring layer for a 5-person team's RAG benchmark delivered to client **LMI**: contextual precision, contextual recall, and answer faithfulness on multi-hop test cases
- Wrote the SQLite persistence layer and a Streamlit dashboard segmenting 2,255 scored responses by query type: inference queries retrieved 33% worse than comparison (0.31 vs 0.46 recall), temporal queries collapsed on faithfulness (0.30 vs 0.85)

LEADERSHIP

Mechatronics and Robotics Society at UVA

Computer Team Member; Outreach Chair, 2025–26

Aug. 2024 – Present

- Authored the team's STEM Industry Plan, a scored deliverable mapping an alumni network now used for internship referrals
- Built the first prototype of the drive team's React telemetry control station for the NASA Lunabotics Challenge

TECHNICAL SKILLS

Languages: Python, TypeScript, JavaScript, Java, C/C++, SQL, GraphQL, HTML/CSS

Frameworks & Libraries: FastAPI, Django, Flask, React, React Native, Next.js, Node.js, Express.js

Machine Learning: PyTorch, TensorFlow, scikit-learn, NumPy

Infrastructure & Concepts: PostgreSQL, Docker, CI/CD, REST APIs, OAuth/JWT, Git, Linux, pytest, AWS S3, ROS