

Vihaan Gupta

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Education

Harvard University

May 2027

- B.A. in Computer Science and Mathematics with a secondary in Philosophy; Cumulative GPA: 3.9/4.0.
- Relevant Coursework: Systems Programming, Human-Computer Interaction, Software Engineering with AI, Data Structures and Algorithmic Theory, Computer Graphics, Machine Learning, Complex Analysis, Probability.

Technical Skills & Projects

Programming Languages: Python, C/C++, Swift, Java, JavaScript/TypeScript, C#, Go, Linux Script, Dart, SQL.

Frameworks & Tools: React, React Native, SwiftUI, Node.js, Git, Xcode, Docker, Kubernetes, Jenkins, Figma.

iOS Developer, HUDSHealth

July 2025 - Present

- Engineering an iOS app in Swift using MVVM architecture for Harvard students to browse dining hall menu with 100+ items and log meals using nutritional data from the university's dining API; launching in October 2025.
- Designing a persistence layer with Core Data and RESTful API integration to ensure offline-first functionality.
- Prototyping AI-based photo logging using CoreML and Vision to classify 50+ meals on-device for initial release.

Project Manager, Ersilia

Nov - Dec 2024

- Designed an AI pipeline in Python to extract metadata from research papers to help train biotech ML models.
- Cut annotation time from 40 minutes to 1 minute per paper by building a PDF parser and integrating OpenAI API.

Full Stack Developer, Prodspace

May - Jul 2023

- Built a productivity web application in React, introducing features like a habit tracker and a pomodoro timer.
- Scaled the platform to active users across 63+ countries within two years, sustaining a 25% 30-day retention rate.

Experience

Software Engineering Intern, MIAX Exchange – Princeton, NJ

Jun - Aug 2025

- Deployed a Spring Kafka library to support the messaging infrastructure for 4 options and an equities exchange.
- Developed 16 reusable Java convenience methods to streamline offset tracking, enable offset rewind for Redis caching, and prevent data loss by bringing down broker unavailability signal handling from 2 minutes to 1 second.
- Integrated kubeLint into Jenkins CI pipeline to automatically scan Kubernetes configuration files on pull requests and developed custom linting rules tailored to compliance policies, detecting issues in 70% of PRs.

Founding Software Engineer, As1 Social – Cambridge, MA

Mar - May 2025

- Engineered 10+ features for the MVP of social media app in React Native (frontend) and PostgreSQL (backend).
- Boosted user retention by 30% by devising caption parsing and hashtag ranking for video recommendations, enabling personalised feeds based on preferences, keyword relevance, and trend recency.
- Optimised caching and memory usage by over 50% via implementing video prefetching and feed pagination.

Software Engineering Intern, Avalon Infosys – New Delhi, India

May - July 2024

- Created mobile interface for the existing OpenEMIS dashboard, enabling users to locate schools across Nigeria.
- Integrated OpenStreetMap with Flutter to render vector-based school markers, cutting map load times by 40%.
- Built for performance and offline-first usability, enabling 90% of core features to work without connectivity and implemented location-based data rendering with an eye toward user privacy and lightweight geospatial UX.

Leadership & Activities

Executive Director (President), HCS Tech For Social Good

May 2025 - Present

- Manage operations of Harvard's biggest technical student organisation, totalling 8000+ hours of pro bono work.
- Administer corporate partnerships, projected to increase the organisation's revenue by 3x in one semester.

Teaching Assistant, Computer Graphics (CS1750)

Aug 2025 - Present

- Assist students with programming assignments and concepts of shaders, animations, keyframes, geometry, etc.
- Evaluate and provide feedback on weekly programming assignments in C++ using the OpenGL library.