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.

Skills

- **Programming Languages:** Python, C/C++, Swift, Java, JavaScript, TypeScript, C#, Go, Dart, SQL.
- **Frameworks & Tools:** React, React Native, Node.js, Git, Bitbucket, Docker, Kubernetes, Jenkins, Figma, AWS.

Experience & Projects

Software Engineering Intern, Miami International Holdings   **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 kubeLinter 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   **Mar - May 2025**
- Developed 10+ features for the MVP of social media app in React Native (frontend) and PostgreSQL (backend).
- Implemented caption parsing and hashtag ranking for video recommendations, boosting user retention by 30% through personalised feeds based on user 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   **May - July 2024**
- Designed mobile interface for the existing OpenEMIS dashboard, enabling users to locate schools across Nigeria.
- Integrated OpenStreetMap with Flutter, rendering vector-based school markers and enabling spatial exploration with custom map layers, reducing map load times by 40%.
- Focused on performance and offline usability, with 90% of core features usable offline, and implemented location-based data rendering with an eye toward user privacy and lightweight geospatial UX.

iOS Developer, HUDSHealth   **July 2025 - Present**
- Engineering an MVP iOS app for Harvard students to browse real-time dining hall menus with 100+ items and log meals using nutritional data from the university's dining API; launching in September 2025.
- 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.
- Built a PDF parser and integrated OpenAI API, reducing annotation time from 40 minutes to 1 minute per paper.

Full Stack Developer, Prodspace   **May - Jul 2023**
- Developed a productivity-enhancing web application using React with features like a habit tracker, calendar, etc.
- Active Users from over 63 countries within two years of its lifetime, with a 30-day user retention rate of 25%.

Campus Involvement

Executive Director (President), HCS Tech For Social Good:
- Manage operations, strategies, finance, and partnerships of Harvard's biggest technical student organisation.
- Hold meetings with Directors to outline branch-specific goals, totalling 15 projects and 8,000+ hours of work.
- Administer corporate partnerships, projected to increase the organisation's revenue by 3x in one semester.

Teaching Assistant, Computer Graphics (CS1750):
- Host weekly office hours to assist students with concepts of shaders, animations, keyframes, geometry, etc.
- Grade and provide feedback on weekly programming assignments in C++ using the OpenGL library.