

Henry Zheng

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EDUCATION

Yale University

Bachelor of Science in Computer Science & Economics

New Haven, CT

Expected May 2027

Amazon Future Engineer Scholar and Ambassador (1 of 348 selected nationally)

Relevant Coursework: **Data Structures, Discrete Math, Operating Systems, Computer Vision**

EXPERIENCE

Software Development Engineer Intern

May 2025 – Aug 2025

Amazon Web Services (AWS) - Agentic AI Frameworks

Seattle, WA

- Owned the **end-to-end development** of an LLM human evaluation platform for Amazon Q, implementing **human preference scoring** to provide critical reinforcement learning feedback for **10+ science teams**.
- Architected a secure data infrastructure to process **TBs to petabytes** of daily AI chat logs and agent traces within a production VPC, ensuring full adherence to App Security and legal standards.
- Integrated a full AWS service stack (ECR, ECS, Fargate, S3) using **AWS CDK**, delivering a scalable, cloud-native **CI/CD pipeline** with modular infrastructure-as-code patterns.

Software Engineer

Sep. 2024 – Present

CourseTable

New Haven, CT

- Drive feature development and platform optimization for CourseTable, Yale's premier course search tool serving **6K+ undergraduates** and handling **50K+ monthly searches**.
- Shipped an advanced **location-based search feature** by scraping and mapping 156 campus buildings to over 4K course entries, implementing a caching layer for efficient data extraction.
- Extending the existing visual schedule planner by developing a new **campus map view**, rendering course locations with **OpenStreetMap** to provide commute time estimates between classes.

Technical Lead & Software Engineer

Sep. 2022 – Jun 2024

Staten Island Technical HS

Staten Island, NY

- Led the development of an integrated ecosystem serving a school pop. of **1.5K+ users**, architecting and building **4 interconnected web applications** for course selection, attendance, and more.
- Engineered and deployed a **custom OAuth SSO service** from scratch, enabling seamless authentication across the application ecosystem using school credentials on a secure, internal-only network.

PROJECTS

Agentic Marketing Platform | *Django, Expo, React Native*

- Built a **multi-agent system** using a **LangGraph supervisor** to orchestrate GPT, Gemini, and Claude APIs, generating comprehensive marketing campaigns in under 60 seconds.
- Implemented interactive timeline artifacts with dual (manual and conversational) edit modes and a **RAG architecture** for contextual campaign personalization.

Course Selection Platform | *Django, Vue, TypeScript, PostgreSQL*

- Collaborated closely with **guidance counselors and school administrators** to successfully **migrate 1.3K+ students** from a Naviance-based form to a new, custom-built web application, iterating on features based on stakeholder feedback.
- Introduced type-safety across the application by executing **5K+ line changes** to migrate core components from JavaScript to **TypeScript** and built a **Chart.js** analytics dashboard.

TECHNICAL SKILLS

Languages: Python, TypeScript, JavaScript, C, R, Racket, HTML/CSS, JSX

Frameworks & Libraries: **Frontend:** React (Next.js), React Native, Vue.js (Nuxt), Svelte, Tailwind CSS, Ionic
Backend: Django, Node.js (Express.js), FastAPI

AI/ML Libraries: LangChain, LangGraph, Pinecone, Weaviate, HuggingFace, NumPy, pandas, matplotlib

Developer Tools & Platforms: **DevOps & Cloud:** Git, Docker, AWS (ECR, ECS, Fargate, S3, CDK), NGINX
Databases & BaaS: PostgreSQL, MongoDB, Supabase **Build & Deployment:** Netlify, Vite, Expo