Spencer Ye

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EDUCATION

Johns Hopkins University | 4.0/4.0 GPA August 2023 - May 2027

- Bachelor of Science in Computer Science; Applied Math Minor
- **Coursework**: Artificial Intelligence, Data Structures, Algorithms, Distributed Systems, FullStack JavaScript
- Activities: Varsity Track & Field (400m School Record Holder); Association of Computing Machinery (President)

SKILLS

Languages:	Python, JavaScript / TypeScript, C / C++, OCaml, SQL
Technologies:	React, Next.js, Flask, Node.js, Dask, Pandas, NumPy, Docker, AWS, Vercel
Practices & Tools:	CI/CD, Git, GitHub Actions, Linux / Unix, REST APIs, OOP, TDD, Agile, Pytest, Conda

WORK EXPERIENCE

Software Engineer Intern *Space Telescope Science Institute* June 2025 - Present

- Built unit, integration, and end-to-end tests in a Pytest suite for health monitors on the Hubble Space Telescope (HST), collaborating with scientists and engineers to align expectations and enable safe refactors
- Debugged ongoing issues in CRDS monitors, enabling validation of HST reference files after 2 years of downtime
- Built GitHub Actions CI pipeline with sharable actions to automate Pytest runs and coverage, streamlining updates and speeding feedback cycles; adopted by 70+ engineers across the department.

Software Engineering Research Assistant *Vision and Cognition Lab* October 2024 - Present

- Architected scalable full-stack experiment platforms with AWS, TypeScript, React, and PostgreSQL, supporting 1,000+ participants and 12 study variants; integrated Vercel CI/CD to accelerate deployment and iteration
- Built data processing pipeline using Neon and pandas, decreasing analysis time from 2 hours to 9 minutes

Software Engineering Intern *Piotech Inc.* July 2024 - August 2024

- Designed and implemented Piotech's first Monkey Testing framework with Python (PyAutoGUI, OpenCV), simulating randomized user behavior to stress-test GUI workflows
- Revamped technical presentations to improve clarity for international engineering teams and stakeholders

Machine Learning Student Researcher *Aspiring Scholars Directed Research Program* March 2022 - June 2023

- Built and tuned classification models to classify 100,000+ molecules as natural or synthetic with ~90% accuracy

PROJECTS

CourseEvaluationScreen | *A full-stack service to help Johns Hopkins students learn about and schedule their coursework*

- Engineered Python (Selenium, Pandas) script to extract data to track student satisfaction for 2,000+ courses
- Designed PostgreSQL schema & ingestion layer to store extracted data, enabling downstream analysis and querying
- Used by 6,000+ students each semester to inform course planning

OCaml RLLib | *The first library in OCaml for using, developing, and training reinforcement learning algorithms*

- Architected interfaces between environment, agent, and renderer components, enabling parallel development
- Achieved >96% test coverage using OCaml's unit and property-based testing frameworks to verify state transitions

24 Game Solver | *An automated system for solving and playing the 24-card game online*

- Designed a recursive backtracking algorithm to determine hand solvability with 99.7% accuracy
- Built automatic gameplay system using Python (Selenium, OpenCV). Ranked #1 globally on July 2024 4nums

Charity Search Engine | *A charity discovery platform that matches users with aligned nonprofits*

- Won 1st place out of 200+ teams for "Best New Venture" at HopHacks 2024
- Enabled free-form donation requests by integrating OpenAI's API to match user intent with real-world nonprofits