Cyrus Singer

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Education

University of Pennsylvania May 2026
Bachelor of Science in Computer Science *Current GPA: 3.64/4.0*

Relevant Courses:
Linear Algebra and Optimisation (graduate level), Internet And Web Systems (graduate level), Computer Organization and Design (graduate level), Engineering Probability, Computer Operating Systems, Introduction to Mechanical Design

Skills

Languages: JavaScript/TypeScript, Java, Kotlin, Python, C/C++/C#, HTML/CSS, LaTeX, Unix Shell, Lua, Haskell, x86, RISC-V
Software Tools: MATLAB, GCP(Functions, Metrics, Cloud Run, IAM, Cloud Storage, Load Balancer, Cloud Logging), AWS(EC2, S3, Sagemaker, IAM), Firebase, Docker, Git, Tailwind CSS, Unix Shell, GDB, Selenium
Other tools: Solidworks, PrusaSlicer, Onshape, SystemVerilog
Software Frameworks: React, Node.js, Express.js, JUnit, Jest
Software Libraries: Pytorch, Tensorflow, pandas, NumPy, matplotlib

Work Experience

Technical Lead on Bizzybots Platform | *Wharton Behavioral Lab* 2022 - Present
- Currently leading development of an LLM-powered chatbot platform used for negotiation research and education
- Manage the five-member development team, set the development schedule, ensure product quality, and direct system design
- Manage QA for the platform, through code standards & reviews, unit testing, integration testing, and UI testing
- Personally handle many full-stack, security, and DevOps tasks

Reference available upon request

Teaching Assistant for Internet and Web Systems (graduate level) | *University of Pennsylvania* 2024 - Present
- Through Office Hours and an online forum, I help students debug their code and understand the course material
- Mentor two groups through the final project, building a distributed search engine

Personal Projects

Weather Balloon Operating Code & Circuits
Python, Embedded Systems, Serial, USB, PWM, I^2C Launched in 2019
- Worked with partner to design, build, and launch a high-altitude weather balloon. This project lasted 9 months.
- Was responsible for producing and validating the software and control systems. The software took measurements from onboard sensors, stored and transmitted the compressed data via a satellite link. The control system managed the balloon's altitude, through dropable ballast.
- Designed and built a redundant power system to run for 3 days without power interruption.
- Received the CREST Gold award for the project.

Brittle Object Simulation | *Python, GPU optimization, Physics Simulation* | source code, 2022
- Developed program that simulated the internal stresses of rigid lattices under arbitrary forces and collisions.
- Simulated each lattice using Newtonian mechanics. Estimated internal bond stresses using gradient descent to fit internal stresses to the lattice's Newtonian motion.
- Optimized the bond estimation algorithm to run in fewer gradient descent iterations.
- Reimplemented the algorithm to run on a GPU, by rewriting the algorithm to use Tensorflow's tensor operations.

RL Experiment | *Java, Python, Tensorflow, Deep Q Learning* | source code 2020
- Developed 2D physics environment in Java. The environment was used to train agents to navigate an obstacle course.
- Tested multiple ML techniques to drive the agents. Predominantly used double deep Q learning.
- Achieved some success in training agents to execute precise jumps.