Sasha Hydrie

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Education

University of Minnesota 2021 to Present [Expected: 2023]
Double Major: Math & Computer Science, GPA: 3.92/4
Interesting classes: Corporate Law and Regulation, Linguistics, Campus Orchestra (Trombone), End of the World.
Talented Youth Math Program (UMTYMP) alum (2014-2019) and two years of dual enrollment (2019-2021, PSEO).

Skills

Python, JavaScript, Mongo, Java, ROS, AWS, Linux, Rust, WebAssembly, TypeScript, OCaml, Haskell, C, x86, Vim.

Experience

Slide - Venue Management and Analytics (Stanford Startup) June 2021 to August 2021
Backend Intern

- Architected API routes for pivot to consumer social features.
- Created a scraper with Node to automate a rote venue data scraping task and enhance data accuracy.
- Designed KPI dashboard to assess business growth and improve pitches.
- Documented backend in OpenAPI format and increased usage of types to enhance developer productivity.
- Outlined core processes of software under coordination of IP counsel to prepare for filing a patent application.

Slingshot - High School Talent Search (CMU Startup) February 2021 to September 2021
Fellow, Moderator, Student Ambassador

- Created and deployed a REST API and CLI to consume it in Python for the fellowship application.
- Moderated a Discord community of nearly 2500 people on a team of 8 across technical and social channels.
- Designed, managed, and judged a weekly OSS challenge, topics include machine learning and web dev.

Quantifying Gerrymandering - Math Research Project (IMA UMN) January 2020 to Present
Undergraduate Researcher, Programmer, (team of three)

- Processed and visualized ”dirty” datasets using Python to facilitate innovation.
- Designed a novel metric to quantify gerrymandering with precinct-level data.
- Received positive feedback on presentation at the MAA North Central Conference in March 2021.
- Paper is being prepared for publication (first author).

CMU Informatics and Mathematics Competition - AI & Optimization Division February 2021
Team Captain, 1st Place AI Division

- Trained highest-scoring agents in all three events. Informal write-up of AI rounds.
- Created a parser and visualizer in Python to interpret match replay files.
- Identified and incorporated key information from live competition environment to improve algorithms.
- Designed pathfinding, distribution approximation, and fitness optimization algorithms.
- Survived a week of high-intensity competition with constant placements matches.

FIRST Robotics Competition - Team 4536, MinuteBots 2017 to 2021
Team Captain
Member of the team for all four years of high school. Major accomplishments:

- Founded and mentored an FTC team to onboard rookies.
- Led outreach events bringing STEM and robotics to underserved communities (Boys & Girls Club).
- Used Scrum methodology and GitHub to coordinate a team of programmers.
- Wrote dynamic path generation and following for autonomous routines in Java.
- Designed a hardware abstraction framework to remove build-testing bottleneck.
- Solicited funds and maintained relationships with existing donors.

Projects

Defying Entropy - Digital Garden Quartz, Hexo, KaTeX, Go, (Hugo, Jekyll, Mathjax, Ruby)

- Latest iteration of personal website, currently leveraging a graph-based note-taking system.
- Honed technical and mathematical writing skills (still a major work in progress).
- Developed web-programming fundamentals (HTML, CSS) through static-site templating.

Autolab Python (Gooey, Seaborn, Jupyter), OpenCV

- Automated boring classical mechanics physics labs by eliminating tracking and fitting by hand.
- Systematically collected data from experiment recordings with a variety of OpenCV trackers.
- Created a GUI that took a video and interactively selected objects to track then output trajectory graphs.

Awards

1871 Tech Challenge World Finalist - Top 20