Sasha Hydrie

hydri001@umn.edu (612) 232-1484 /iCalculated /in/shydrie

Education

University of Minnesota, Honors (B.S. in Compsci and Math, 3.96 GPA) Sep 2021 - May 2025 [Expected]

Experience

Jane Street, Software Engineering Intern (janestreet.com) Jun 2023 - Aug 2023

- Created macros for low-latency tracing in async systems, revising the scheduler to support introspection.
- Implemented a general purpose library for fitting regularized manifolds with techniques from a paper.
- Rearchitected distributed pipeline for implied volatilites to fit all options for an underlying simultaneously.

Optiver, Software Engineering Intern (optiver.com) Jun 2022 - Aug 2022

- Aggregated stats from 1000 servers with 15 second cadence, including process data for production event retrospectives.
- Synchronized 750 network devices geographically distributed network device clocks to within 3 nanoseconds.
- Optimized energy consumption in dense computer cluster to be reliably within 0.3% of threshold.
- Validated state of production hosts with Ansible jobs to ensure repeatable deployment of 8000 processes.

CHOICE Lab (CV, RL, Robotics), Undergraduate Researcher (choice.umn.edu) Oct 2022 - Present

- Gained practical experience with SOTA reinforcment learning algorithms.
- Presented at UMN undergraduate symposium about keypoint representation of state space.

FIRST Robotics Competition — Team 4536, Team Captain Sep 2017 - May 2021

- Led outreach events bringing STEM and robotics to underserved communities (Boys & Girls Club).
- Wrote dynamic path generation and following for autonomous routines in Java.
- Designed a hardware abstraction framework to remove build-testing bottleneck.

Slide (Stanford Startup), Backend Intern (slide.us) Jun 2021 - Aug 2021

- Architected API routes for pivot to consumer social features, used by hundreds of users.
- Automated myself out of a rote venue data scraping task and enhanced data accuracy with Node.
- Outlined core processes of software under coordination of IP counsel for a patent application.

Projects

Watercooler Report, 2nd @ Hack Violet 2022 (github) Python (Keras, Flask), GCP, Docker, JavaScript

- Tested variety of ML techniques: logistic regression, gradient-boosted trees, biLSTMs, embeddings, attention.
- Integrated with Slack and G Suite to detect benevolent (normative) and hostile sexism.
- Deployed a low-latency flask microservice to Google Compute Engine.

Anony.news, 3rd @ Hack for Humanity 2022 (github) Python (OpenCV, RTMP), FFmpeg, Next.js, Docker

- Blurred faces of bystanders from real-time news streams using OpenFace and OpenCV.
- Automatically deployed to Digital Ocean on push leveraging Docker Compose and Github Actions.
- Implemented an RTMP proxy server with integrated YouTube streaming (or URI for manual forwarding).

CMIMC AI 2021 (CMU), 1st Place (website) Python, JavaScript

- Trained highest-scoring agents in all three events out of 120 teams.
- Parsed and visualized match replays in Python to identify optimization opportunities.
- Designed pathfinding, distribution approximation, and fitness optimization algorithms.
- Survived a week of high-intensity competition with constant placements matches.

Achievements, Languages, and Tools

Achievements: World Finalist @ 1871 Tech Challenge 2021, Speaker @ 2021 MAA North Central Conference

Languages: Typescript, Python, C++, React, LaTeX, OCaml, Elixir, Rust, Torch, Stable Baselines

Tools: MongoDB, MySQL, Firebase/Firestore, Google Cloud Platform, AWS, ROS, Docker, Ansible, Prometheus, Linux, Git, Vim