

Sam Harreschou, MEng Machine Learning Engineer

📍 Santa Monica, CA [in /sam-harreschou](#) [✉ samharreschou2@gmail.com](mailto:samharreschou2@gmail.com) [🖱 https://samharreschou2.github.io/](https://samharreschou2.github.io/) [🌐 /samharreschou2](#)

Experience

10/2022 – present
Pasadena, CA

Machine Learning Engineer, Miso Robotics [🔗](#)

- Flippy 2 [🔗](#) is a smart commercial kitchen robot that makes items ranging from fries to chicken nuggets, using ML for computer vision based pose estimation, food classification, collision/misgrab forecasting, and order forecasting. I have been responsible for designing and fine tuning new pose estimation and collision/misgrab forecasting models.
- Created hyper parameter and architecture tuning framework used for computer vision based pose estimation and collision / misgrab ML models with Flippy 2 [🔗](#)
- Designed and fine tuned Flippy 2 realtime ML models to predict collisions and misgrabs with sensitivities of >80% and lift scores above 12 utilizing 20+ GB of training data from customer locations
- Created image preprocessing pipeline for computer vision based pose estimation on Flippy 2 [🔗](#), driving marker detection rates up 20%
- Prototyped SIFT based pose estimation software for Flippy 2 [🔗](#) baskets and fryers along with custom markers, significantly improving robustness to lighting variation and grease accumulation

05/2022
Santa Monica, CA

Co-creator, Software Engineer, Conifer [🔗](#)

- Co-created Conifer [🔗](#), an open-source framework that simplifies parallelizing Cypress tests on AWS infrastructure for local development
- Co-authored case study, incl. research on parallelizing E2E testing, Conifer's use case, design decisions, & tradeoffs
- Reduced local Cypress test suite run time by up to 3.7x via parallelization & optimized test splitting
- Wrote a multi-stage algorithm for effectively allocating test files to parallelized nodes
- Created a live dashboard for visualizing test results
- Collaborated remotely with a team of engineers, organizing daily stand-ups, code reviews, and pair programming sessions

02/2019 – 10/2021
Berkeley, CA

Software Engineer, Lawrence Berkeley National Lab [🔗](#)

- Built an end-to-end ETL pipeline, website, and notification system for monitoring carbon monoxide levels, enabling seamless reopening of shutdown lab division
- Built an E2E ETL pipeline for air quality monitoring which integrates several weather APIs' data for informing lab operations decisions

08/2020 – 05/2021
Berkeley, CA

UC Berkeley Master's Thesis, [UCSF Bakar] Enhancing Physicians' Prognoses using Deep Learning: An Ergonomic UI to Find Similar Patient Groups and Medical Trends [🔗](#)

- Designed and prototyped a machine learning application for UCSF clinicians, utilizing NLP techniques like Word2Vec and Doc2Vec embeddings to analyze and cluster over 10 million unstructured clinical notes, enhancing patient similarity assessments within a large database
- Employed advanced data preprocessing methods to clean and normalize unstructured text, applied dimensionality reduction for efficient data handling, and leveraged unsupervised clustering algorithms to categorize patients by clinical note content
- Received positive initial feedback from clinicians, prompting consideration by the UCSF Bakar Computational Health Sciences Institute [🔗](#) for further exploration and development

12/2014 – 02/2019
Santa Monica and Berkeley, CA

Project Manager, Environmental Inspection Services [🔗](#)

- Conducted, planned, and supervised environmental hazard characterization projects
- Interfaced with clients for sales calls and questions; led client acquisition, proposal writing, and report writing activities

Skills

Languages

Python, Javascript, SQL, MATLAB, HTML, CSS, Bash

Frameworks/Libraries

Tensorflow, PyTorch, scikit-learn, React, Redux, Express, Flask, Jest, Google Apps Script, Streamlit, Selenium, OpenCV, Dask

Technologies

Git / Github, Docker / Docker Compose, MongoDB, PostgreSQL, MySQL, Postman, Raspberry Pi, Edge Impulse, Jira, Confluence, OptiTrack, SQLite

Cloud Services & CI/CD

AWS (ECS, EC2, S3, DynamoDB, Athena, CDK, SDK, Lambda, AWS Batch, Step Functions, Code Build), GCP (BigQuery, Cloud Functions, Vision AI), Terraform, AWS Code Pipeline, Github Actions

Education

05/2021

Master of Engineering, Data Science Emphasis, UC Berkeley College of Engineering [🔗](#)

08/2018

Bachelor of Science in Nuclear Engineering, UC Berkeley College of Engineering [🔗](#)

10/2021 – 05/2022
Santa Monica, CA

Software Engineering Core Curriculum, Launch School [🔗](#)

05/2022 – 10/2022
Santa Monica, CA

Software Engineering Capstone Program, Launch School [🔗](#)