SAM RANDALL

Email: samrandall@alumni.stanford.edu, Website: https://sam-randall.github.io/samrandall.github.io/

I build end-to-end software MVPs and solutions to solve real-world problems. I have experience integrating optimization, computer science algorithms, and machine learning into production-ready systems.

Education

Stanford University — *M.S. Computational & Mathematical Engineering (GPA: 3.86)*

DGSAC Exceptional Master's Student Award.

- Built parallelized ML training system in C++ (with CUDA & OpenMP).
- Implemented physics mesh simulator in C++ with Thrust acceleration.

Johns Hopkins University — *B.S. Applied Mathematics and Public Health.*

Minors: Computer Science and Environmental Science.

Experience

Madmen AI — Founding AI Engineer — March 2025 — Present

- Owner of winner variant flow, identifying critical issues blocking our operations team to generate creatives, re-wrote Winner Variant flow, resulting in successful product launch May 31.

Consultant — *Feb 2025 — Present*

- **Applied integer programming** to help Sacramento-based coach make his basketball team's lineup fair and competitive in all periods.
- Check It Out >> https://sam-randall.github.io/samrandall.github.io/basketball-lineup-app.html

BlueLightAI — Principal Applied Scientist — *Jan 2023 — Feb 2025*

- Applied connected components graph algorithm on top of graph-based hierarchical clustering algorithm to **identify group machine learning model errors**. Demonstrated the algorithm's ability to spot mislabeled data in tabular settings, image domain, and text domain.
- Improve model performance on intent recognition task (banking 77 dataset) on a subset of data relating to missing or stolen credit cards from ~50% to 92%, by developing system to cluster and then retrieve similar available data in data lake; **created visuals / write-up that led to pilot with Global 500 company**.

Software Engineer -> Lead Software Engineer. — *Jan 2023 — Sep 2024*

- **Managed software lifecycle** (established unit/integration testing standards, maintained engineering standards with PR reviews), resulting in accurate & maintainable code base.
- **Prototyped & integrated graph interpolation feature**, enabling intuitive multi-scale dataset visualization, leading to positive feedback from a potential client.
- **Modified graph force layout algorithm** in TypeScript to separate & bubble-pack connected components based on diameter to improve data visualization UX.

Athena Security — iOS Engineer — *2020 – 2022*

- **Built fever detection iPad app**, by integrating thermal camera video feed and real-time image processing consisting of computer vision model to detect & track faces. Sent alerts per tracked person to backend.
- **Rapidly responded to prospects' & customers' requests**; ranging from systems integrations to new feature requests.

PHICOR — Research Data Analyst — *2017 – 2020*

- Scripted the execution & analysis of simulation runs; **automating a labor-intensive process**.

- Streamlined labor-intensive download / organization process of large (>1500 files) dataset.

Cocoa — Founder Apr 2020 – Apr 2022

- Led strategy, design and building of iOS app Cocoa built for connections to enable asynchronous audio communication to make keeping in touch easier. Used SwiftUI and integrated Whisper model on device for transcription. Beta-tested with 50+ people.
- Developed match-making service to connect people based on interests. Generated leads with universities.

STEM Teaching & Tutoring Experience

Ordinary Differential Equations, *Course Assistant* 2022
Software Development for Engineers and Scientists, *Course Assistant* 2021
Juni Learning, *Computer Science Tutor for children aged 5-18* 2019 – 2020

Skills

SWE: Python, Typescript, Swift, C/C++, PyTorch, git, CUDA, OpenMP, Graph Theory.
Data: Machine Learning, Computer Vision (CV), Natural Language Processing (NLP), scikit-learn.
Math: Applied Topology, Computational Geometry, Linear Programming, Convex Optimization.