Ammar Y. Safdari

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EDUCATION

University of Michigan *Ann Arbor, MI*
Bachelor of Science (GPA: 3.76/4.00) *May 2023*

- ***Majors***: Computer Science (**GitHub**) and Physics **(Vpython Physics Code Compendium**)
- ***Relevant Coursework***: Data Structures and Algorithms, Computer Organization, Web Systems, Intro to AI, Operating Systems, Database Management Systems, Machine Learning, Computer Security, E&M, Thermo, Advanced Energy Solutions, and Probability and Statistics
- ***Relevant Coding Projects*** **(Descriptions: website**, **Dropbox: code**):

  Computer Security → Coded a length extension attack on MD5, the Bleichenbacher attack, and a padding oracle exploit which takes advantage of returned errors to decode a sha256 encoded message. Also created sql injections, XSS, and CSRF to bypass the security of a dummy website

  OS → Created a multithreaded fileserver that used reader/writer locking to protect shared state data. Made a virtual memory pager to provide the abstraction of separate address spaces for multiple processes running on the same machine. Developed a multicore C++ threading library which supports mutexes and condition variables. Coded a concurrent disk job scheduler using the shortest seek time first algorithm.

  Databases → Developed database schemas using ER diagrams and wrote SQL files to initialize and populate the relations. Used the Java Database Connectivity interface to parse the results of complex SQL queries into data structures. Gained exposure to using Mongodb to write queries and map reduce programs. Implemented the grace hash join algorithm used when joining two relations during SQL query execution.

  Web Systems → Made different fidelity Instagram clones using jinja, flask, React, SQL, and EC2 instances for deployment. Wrote a map reduce framework like the Hadoop streaming interface using the Python threading lib. Built a search engine with page rank and tf-idf to index results.

  Data Structures and Algorithms → Used and implemented priority queues, deques, pairing heaps, hash tables, and many other data structures. Coded algorithms such as Prim's, Kruskal's, Dijkstra's, TSP with heuristics, branch and bound, DP algs, and image seam carving.
- ***Graham Sustainability Scholar***- engaged in a program that catalyzes and facilitates sustainability-focused collaborations involving faculty, students, and external stakeholders to work our way towards a greener future
- ***Accolades***: Grand Prize Winner of EECS 183 Computer Showcase for programming space invaders onto LED boards

Menlo-Atherton High School Menlo Park, CA
High School Diploma (GPA: 4.3/4.0) Graduated June 2019

- 1520 SAT, National Merit Commended Student, AP Scholar With Distinction, 4-year honor roll, and Principal's Student Service Award

WORK EXPERIENCE

Vianai Systems *Palo Alto, CA*
Software Intern *May 2022 – August 2022*

- Took a return offer to help write code for **Vianai's** AI MLOps Platform, a one stop shop to train, manage, deploy and monitor AI models
- Wrote web apps with React, classes for our custom AI library, and SQL transformers to preprocess data before training

Mach *Menlo Park, CA*
COO & Co-Founder *April 2021 – Present*

- Released Mach on the app store, an app focused on facilitating social get togethers while also driving business revenue for downtown areas
- Developing new features while marketing the app to businesses, doing user acquisition, and looking for investment opportunities as well as potential integrations with the blockchain ecosystem to offer user rewards for in app engagement and to gamify the overall app experience

Sandia National Labs *Albuquerque, NM*
Remote Software/Energy Storage Intern *May 2021 – April 2022*

- Worked on the open source project **battery lifecycle framework** creating data pipelines, adding API methods, and front end pages/dashboards
- Scripted back end data importers using python (sqlachemy, psycopg2, and pandas) which enable **BatteryArchive** to accept and upload different data formats into our PostgreSQL database. Our database consists of TBs of battery data given to us by contributors to host on our site
- Used node.js and react.js to design forms and responsive tables to edit and display battery cell metadata stored in our database
- Containerized and deployed code using Docker and gained experience debugging Docker containers

Lookout *Menlo Park, CA*
Front End Developer *November 2021 – March 2022*

- Used React, HTML, and CSS to create most of **lookout.finance**, a simplified and easier way to keep track of personal finances across accounts
- Created customizable React dashboards, charts, and table components as well as the sign up/sign in flow with authentication

Done Waiting *Ann Arbor, MI*
Web Developer *September 2019 – May 2022*

- Created a website and online merchandise store for **Done Waiting organization** with over 13,000 subscribers and $5,000 in sales
- Implemented a custom phone banking software for Done Waiting using Flask, Bootstrap, and Firebase, saving thousands of dollars

SKILLS/INTERESTS

Skills: French, C++, Python, HTML, CSS, JavaScript, SQL, Full Stack Developer, Excel, Matlab, GCP, and Docker

Interests: Table Tennis, Tennis, Basketball, Reading, Chess, Stocks, Clean Energy, Energy Infrastructure, AI, Blockchain, and DeFi