Kavan Mehrizi

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EDUCATION

University of California, Berkeley *– Berkeley, CA*

Bachelor of Science, Electrical Engineering and Computer Sciences *December 2024 (Expected)*

- *Selected Coursework*: Structure & Interpretation of Computer Programs, Circuits & Linear Algebra I & II, Foundations of Data Science, Data Structures & Algorithms, Principles & Techniques of Data Science, Human–Computer Interaction, Database Systems. *In Progress*: Computer Security, Large Language Models, Decentralized Finance.
- *Activities and Memberships*: Vice President & Co-Founder of EECS Transfers @ Berkeley Club, Member of Berkeley IEEE Branch, Member of Hispanic Engineers and Scientists Society, Member of Puente at Berkeley, Student Member of IEEE Computer Society, Student Member of SHPE, Student Member of SACNAS, Member of ColorStack.

SKILLS

- *Programming/Scripting Languages:* Python, Java, C++, SQL, Excel, HTML/CSS, JavaScript, TypeScript, C, R
- *Frameworks and Libraries:* NumPy, Pandas, Matplotlib, PyTorch, Git, MySQL, MongoDB, Arduino, ROS
- *Hobbies*: Avid skier (10 years), film & digital photographer (won award from Google), goalkeeper, 3D printing, automation tinkering, open-source software, IoT, founded Berkeley's only EECS/CS transfer-focused student organization

EXPERIENCE

Data Strategy and Analytics Intern

American Express Company – Phoenix, AZ *June – August 2024*

- Evaluated and improved the effectiveness of a risk-based limit strategy for business customers exiting the Financial Relief Program, resulting in a **35% increase** in spend enablement while maintaining a low delinquency rate.
- Conducted in-depth analysis of customer behavior and risk profiles using **SQL** and **Pandas**, identifying key factors to a **10% increase** in eligible spending accounts.
- Presented findings and discussed strategy with the Chief Credit & Risk Officer, driving widescale implementation efforts across various departments and teams.

Machine Learning Intern

Amazon Science - UCLA – Los Angeles, CA *June – August 2023*

- Investigated dialect and accent bias in **Automatic Speech Recognition** systems, focusing on **OpenAI Whisper**, to improve speech recognition accuracy for diverse linguistic groups.
- Engineered a **question-answering** system using Hugging Face **DeBERTa** & Meta **LLaMA-2** with **NumPy** and **PyTorch** while **fine-tuning** Whisper with the CORAAL interview dataset to reduce bias in speech recognition for AAVE.
- **Improved** QA performance by **integrating** LLaMA-2, achieving a **4% improvement** in word error rates (WER) and **increased** F1 score on African American Vernacular English (AAVE) compared to conventional QA models.

Software Engineering Intern

Carnegie Mellon University – Pittsburgh, PA *May – August 2022*

- Developed **data mining** scripts with **Pandas** and **SQL** to analyze **5.5 million** commits across 30k+ popular GitHub repositories, **identifying** key maintainers to support open-source sustainability research.
- **Optimized** contributor identification script to merge multiple GitHub aliases to enable more precise analysis.
- Identified **584k** distinct contributors and **110k** distinct maintainers for a comprehensive study on open-source project sustainability.

Robotics Development Intern

University of California, Berkeley – Berkeley, CA *June – August 2021*

- Developed Python **speech interface** using **Amazon Polly** and **Google Cloud** Speech-to-Text APIs for a robotic guide dog to facilitate direct, vocal **human-robot interaction** allowing for **independence** of guide dog by eliminating the need for a computer to manually send commands into guide dog's existing ROS and C++ infrastructure.
- Authored student paper, **cited by Google DeepMind**, and presented research to **300+** total attendees at multiple symposiums across UC Berkeley.

PROJECTS

Word Usage History & Hyponyms Explorer

Java, Data Structures, Data Analysis/Visualization, Datasets

- Implemented backend for a browser-based tool for analyzing history of word usage and frequency in Google's NGram dataset. Built ability to find hyponyms using the WordNet dataset with merging/comparing synonym graphs and graph traversals.

World Generator

Java, Data Structures, A, Binary Space Partition*

- Developed a 2D tile-based world exploration game in Java that supported a random world generator using A* and BSP for dynamic, complex environments. Utilized various data structures such as arrays, lists, maps, sets, and stacks to store and manipulate the tiles, rooms, hallways, entities, and paths in the world.

Shortest Path Navigation

C++, Data Structures, Graphs, Priority Queues

- Built a navigator to find the minimum path between two points via Dijkstra's using graphs and priority queues.