

# CAMERON HIRSH

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## SKILLS

**Languages** Javascript, Python, Java, SQL, R, M, DAX, Scheme, C, Bash, RISC-V Assembly  
**DevOps** AWS: EC2/RDS/S3, Git, CI/CD, npm, webpack, babel, Node.js, Postman, k6, streamlit.io, HTML5, CSS, TDD  
**FW/Lib** Express, React, Redux, Jest, Mocha, Chai, Sequelize ORM, bluebird, supertest, jQuery, OpenCV  
**Data/AI** Power BI, pandas, numpy, matplotlib, scikit-learn, pytorch, graphQL, Jupyter

## EXPERIENCE

**Atelier E-Commerce** *AWS EC2, NGINX, Loader.io, Node.js, Express, Webpack, Babel, React, MySQL, Mongoose*

- Horizontally scaled legacy monolithic systems to increase RPS threshold, utilizing NGINX load balancer and microservices.
- Designed and deployed custom No-SQL database and API, decreasing server response times from ~2400ms to ~50ms.
- Improved ETL script RAM usage by ~99.8% through batch processing of CSV files exported from legacy DB.
- Decreased time to first contentful paint from ~1.6s to ~0.5s by eliminating redundant HTML requests and minifying CSS/JS.
- Built the client application using React and CSS. Integrated click tracker feature to analyze client behavior. *Demo link*

**QuartZite EcoDrive** *Javascript, Github Actions, AWS Elastic Beanstalk, MongoDB Atlas, React, GoogleMaps API*

- Developed a mobile rideshare web app (*MERN*) that incentivizes users to carpool to/from regular commutes.
- Led database design, implementation, and management. Used CI/CD and Agile methods in a 3 week app development cycle.
- Owned the feature for a user starting/ending a trip. Ensured each user's data is updated appropriately upon any client's action.
- Optimized client-side performance by decomposing effects hooks using dependency arrays. Tested with Jest and supertest.

**Mini Maps** *Java, Spark, OpenStreetMaps API*

- Wrote a Java backend to create a Google Maps style mapping application for the UC Berkeley campus and its surroundings.
- Efficiently routed user by implementing the A\* heuristic shortest path algorithm in conjunction with a custom min-heap.
- Leveraged the trie data structure for point of interest search autocompletion, and a K-D tree for finding the closest node.
- Built an API router to handle user requests, map resizing, and automatic rastering.

**Mobility Analysis** *Python, Jupyter, pandas, numpy, scikit-learn*

- Analyzed the Covid-19 pandemic's impact on society's mobility patterns across countries using Google's Mobility Dataset.
- Conducted Multiple Hypothesis Testing to inspect the differences in impact between developing and developed countries.
- Investigated the relationship between workplace and retail mobility using Causal Inference, using OLS to mitigate bias.

**Chatterbox** *Javascript, Node.js, bluebird, Mocha, jQuery, AJAX, HTTP, XSS*

- Built the client-side for a live-chat application, displaying chat room messages and allowing clients to submit messages.
- Wrote the backend using NodeJS, defined request handlers, and built a custom utility library to perform data pre-processing.
- Utilized jQuery to minimize the codebase and abstract JS DOM manipulations. Implemented baseline XSS protection.

## EMPLOYMENT

**Cibus** **Senior Research Associate: LIMS & BI** *2021 - Present*

- Scaled Trait Machine production efficiency 4x by leading design and integration of a unified LIMS solution (*L7 ESP*).
- Defined user requirements, developed workflows for gene editing processes, integrated instruments, and led end-user testing.
- Built and deployed PowerBI reports (data model, transformation, & visualization) for both commercial and research teams.
- Designed the underlying relational ERD's using *DBeaver*, and sourced data from custom API and ESP's PostgreSQL database.

**SigmaPoint Technologies** **Quality Engineer Co-op** *2020*

- Reduced operational overhead ~15% by configuring *Bluestar PLM* Module to replace siloed QMS app (Lotus Notes).
- Streamlined workflows for SOP's NCR's, RMA's, QA's, and CAR's, adhering to ISO 9001 Quality process requirements.
- Automated KPI and metrics monitoring by building a dashboard in *Microsoft D365*, eliminating manual report generation.

## EDUCATION

**Hack Reactor** *Certificate in Full Stack Engineering* *2023*

- Advanced full stack web application development program (PST) including REST, CRUD, React, jQuery, Express, and AWS.

**University of California, Berkeley** *B.A. Data Science* *2021*

- Emphasis in Computational Biology Methods (sequence alignment, phylogeny, probabilistic models).
- Courses: Data Structures, Artificial Intelligence, Data, Inference, & Decisions, Designing Information Devices & Systems I/II, Multivariable Calculus, Discrete Math & Probability Theory, Principles of Data Science, Linear Algebra, Machine Structures