Rachel Lin

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Education

University of California, Berkeley — Berkeley, CA

M.S. in Electrical Engineering and Computer Science — *Expected Graduation: May 2025*

- GPA: 4.0/4.0 | Relevant Coursework: Large Language Model Agents, Human-Computer Interaction Research

B.A. in Computer Science, Minor in Data Science — *Aug. 2020 – May 2024*

- GPA: 3.82/4.0 | Relevant Coursework: Machine Learning, Data Engineering, Database Systems, Natural Language Processing, Data Structures & Algorithms, Computer Security, Probability, Web & HCD

Work Experience

OmniVision Technologies — May 2022 - Aug. 2022

Data Algorithm Intern — *Santa Clara, CA*

- Generated 15 LED light automobile video simulations and their corresponding binary maps in Blender. Partitioned data into 80-20 split for cross-validation with OpenCV.
- Created a classifier using PyTorch's neural network module with ReLU and fully connected layers, achieving $\sim 93\%$ accuracy in identifying LED light sources.

Research Experience

UC Berkeley EPIC Data Lab — Berkeley, CA

HCI Research Apprentice, supervised by Professor Aditya Parameswaran — *May 2024 - Present*

- Creating a React front-end platform for an iterative, embedding-based retrieval system for datasets.
- Leveraging a chatbot to deliver domain expertise and dynamically generate widgets for personalized and efficient dataset searches. Utilizing a sunburst chart for visual organization and top-level exploration.

ML Research Apprentice, supervised by Professor Aditya Parameswaran — *Sept. 2023 - May 2024*

- Assessed LLMs' ability to conduct feature selection for missing data imputation implicitly. Evaluated the performance of ChatGPT, KNN, and LogisticRegression models.
- Implemented batch calls for Hugging Face embeddings and parallelized seed runs on Modal's cloud functions, reducing computation time from 2 weeks to just 6 hours.

UC Berkeley Cognition and Action Lab — Berkeley, CA

Computational Research Apprentice, supervised by Professor Richard B. Ivry — *May 2023 - Jan 2024*

- Engineered a predator-prey reinforcement model to simulate prey movements based on the predator's prior 3 locations to calculate acceleration and velocity. Visualized paths per timestep using Matplotlib.
- Streamlined the data transfer process by facilitating the integration of patient testing results into CognAc's database, encompassing 1500+ participants.

Projects

Document Management System | *Golang*

- Designed and implemented an encrypted file-sharing system using RSA Public Key Encryption, CTR Block Cipher data encryption, and SHA-512 HMAC to ensure confidentiality, integrity, and authenticity.

Gitlet | *Java*

- Designed and built a version-control system modeled after Git which allows users to track & commit file changes, revert to previous versions, create & merge branches, and implement remote features.

Technical Skills

Programming Languages: Python, Java, C/C++, SQL (postgres), JavaScript, HTML/CSS, RISC-V
Libraries & Developer Tools: pandas, NumPy, Matplotlib, React, MongoDB, Microsoft Azure, PyTorch, Seaborn, Scikit-learn, Asyncio, Modal, Figma, Blender, Git, Google Colab
Languages: English (fluent), Mandarin (fluent)