RIXIAO ZHANG

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EDUCATION

Bachelor of Science: Electrical Engineering And Computer Sciences

University of California, Berkeley | Berkeley, CA | Dec 2021

- GPA 3.6
- Relevant Coursework: Data Science, Data Structures, Efficient Algorithms & Intractable Problems, Software Engineering, Computer Architecture, Computer Security, Optimization Models in Engineering, Probability Theory & Discrete Math, Linear Algebra, Signals and Systems, Robotics.

SKILLS

- **Languages**: Python, Java, Go, C, SQLite, HTML/CSS/Javascript, Solidity
- **Libraries**: Scikit-Learn, Matplotlib, Numpy, Pandas, Jupyter
- **Technologies**: GitHub, Travis CI, Pivotal Tracker, Codecov, BitBucket, GitBash

EXPERIENCE

Research Assistant

University of California, Berkeley | Berkeley, California | Jan 2020-Aug 2020

- Helped with the data cleaning and data labeling for a research project at the School of Information, Berkeley. Constructed the very first new dataset of fine-grained laughter annotations on top of the existing AudioSet. The final paper was submitted to the 2021 International Conference on Acoustics, Speech and Signal Processing (ICASSP), currently under review.

PROJECTS

- **Project Numpy:** A library implemented in the C programming language for the Python programming language , adding support for large, multi-dimensional arrays and matrices, along with some basic high-level mathematical functions to operate on these arrays. Used cache blocking, SIMD, and multi-thread to speed up operations like matrix multiplication and matrix power. Multiplication speedup: 116x, Power speedup: 1728x, Comprehensive speedup: 107x. Ranked in Top 15% of class.
- **Project Dropbox:** An end-to-end encrypted file sharing system. Designed and implemented a file sharing service similar to Dropbox that protects user privacy in the Go programming language. Used RSA for public key encryption and digital signature verification, and CFB Block Cipher mode with SHA-512 HMAC for data encryption to provide secure data sharing between users.
- **Spam/Ham Classification:** A discriminative learning model used to classify emails as spam or ham. Trained Logistic Regression classifier with Batch and Stochastic Gradient Descent. Used Pandas to pre-process data, Numpy and Scikit-Learn for main algorithmic implementation, and Matplotlib to visualize results. The model's training accuracy is 91.4% and the test accuracy is 88.5%.
- **Ensemble Learning with Random Forests:** A classification model that utilizes Random Forests to predict a player's position given several features. Implemented Decision Tree and Random Forest classifier classes in Python using One Hot Encoding for categorical features Incorporated cross-validation. The model's training accuracy is 98.2% and the test accuracy is 100%.
- **Project SIXT33N:** A three-wheel, intelligent, mobile robot that responds to voice input Designed a PCA classification algorithm in Python to process and recognize specific audible commands that move the robot accordingly Implemented a proportional closed-loop feedback control system to regulate speed and direction for its two motorized wheels
- **GitHub**: https://github.com/rixiaozhang and https://github.com/RIXIAO-ZHANG