Ethan Liu

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EDUCATION

University of California, Riverside| BS in Computer Science and Business Applications   Graduation date: June 2023

University of California, Santa Cruz| MS in NLP

Expected: December 2024

PROJECTS

Wizard 102
- Utilized composite and strategy design patterns to create a mini-dungeon game coded in C++.
- Developed different functions in order to take in different player inputs. Created and established Unit and Integration Testing with GoogleTest framework.
- Utilized common methodologies to ensure steady progress and proper management on the project. Learned and saw how impactful it is when working as a team to have good communication, the usefulness of methodologies, and how to write proper unit tests to ensure the code works to avoid any breaks in the builds.

Free Health Care
- Utilized Python to read in different data sets of health care using pandas, NumPy, Seaborn, and Matplotlib to display health care data with different graph types.
- Used algorithms to compare the mean and GDP spent on healthcare based on the United States and other countries.
- Utilized common methodologies to ensure steady progress and proper management of the project. Learned the importance of good communication as the project's time limit was only 4 days. So we had to be organized and have good communication which was done through common methodologies.

Collude
- Collude is a collaborative grocery app that utilizes Python, Javascript, CSS, and HTML to give users an application that can easily reduce any miscommunication about over-purchasing groceries.
- Worked on the backend development of the app which uses python and implemented the usage of the Google firebase API to regulate and check logins.

Twitter Crawler
- Utilized Java, Lucene, and Apache tomcat v7 to build a server to display crawled tweets from Twitter.
- The crawler was coded in Python which took advantage of the Tweepy library for the crawler. The crawler successfully gathered tweets that contained an URL to an HTML page, title, user id, and geo-location. Data was stored in a JSON file.
- Worked on backend development which uses Lucene's indexing and JSON parsing to successfully display the results of tweets.

Image Similarity
- Created an image similarity search that utilized a dataset from Kaggle using PyTorch and Spotify Annoy and coded it in Java.
- I built an Annoy index then loaded the same index from the script and iterated through the images with the input tensor and got the output.
- I also used Spotify Annoy in order to get the nearest neighbor to create a grid of 24 images that have the most similar features of the picture that was sent to the neural network then storing it in a folder.

COURSEWORK
- C++ Programming 1 & 2
- Data Structures and Algorithms
- Data Analysis Methods
- Design of Operating Systems
- Machine Organization & Assembly Language Algorithms
- Logic Design
- Software Construction
- Intro to Information Retrieval
- Intro to Software Engineering
- Logic Design
- Intro to Artificial Intelligence

- Automata and Formal Languages

SKILLS

Technical Skills: C++, Pytorch, Python, Debugging, LaTeX, Excel, Strategy, Research, Visual Studio, Unit & Integration Tests, Linux, Github, MySQL, Backend Developer, Node.js, AWS,

Soft Skills: English, Mandarin, Communication(written and spoken), Problem Solving, Leadership, Networking, Researcher