

Henry Huang

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EDUCATION

University of California San Diego

La Jolla, CA

Mathematics - Computer Science (B.S.), Minor in Data Science

Sept. 2022 – June 2026

- **Coursework:** Data Structures, Algorithms, Recommender Systems, Natural Language Processing (NLP), Computer Vision, Graphics, Computer Organization, Theory of Computation, Optimization, Frontend
- **Upcoming:** Programming Languages, Databases, Computer Architecture, Parallel Computing

EXPERIENCE

Department of Defense – National Guard Bureau

Moreno Valley, CA

Software Engineering Intern

Mar. 2023 – June 2023

- Developed view-specific video and intel dashboard to improve CalFire fire & incident response times and robustness of communication across local/county/statewide entities with **Django**
- Prototyped front-end interface with **Streamlit** and implemented in **HTML** and **CSS**
- Conducted **20+ interviews** across nationwide defense/first response agencies for testing of user experience by analyzing intelligence flow and system flaws through user testing
- Integrated **PostgreSQL** database to securely store uploaded information and image files for retrieval

Triton Baja SAE @ UCSD

La Jolla, CA

Web Developer

Mar 2023 – Present

- Designed and implemented responsive webpage, animated with **CSS**, component formatting with **ReactJS**
- Optimized rendering times across devices by front-loading elements using a **CDN**

PROJECTS

Price Quantitative Analysis Tool | *Node.js, Python, Pandas, NumPy, PostgreSQL, psycopg* June 2023 - Present

- Created a **Node.js web scraper** to log item details from **HTML** site elements to collect data
- Communicates between **PostgreSQL** database and updated **JSON** file of scraped tabular data with **psycopg**
- Conducts **data analysis** using **pandas** and generates purchase advice based on current price against historic trends, leading to improved decision making

Video Sentiment Chrome Extension | *ReactJS, Pandas, NLTK, sklearn, SciPy* Oct 2023 - Present

- Tokenized words with Python NLP toolkit **NLTK**, conducted sentiment analysis using classifier models **RoBERTa**, **VADER** for ensemble learning and cross-validation of video response consensus
- Created Chrome extension front-end interface with **ReactJS** and **Chrome API**

Deep Averaging Network Sentiment Analyzer | *PyTorch* Sept 2024 - Oct 2024

- Implemented **feedforward neural network** mapping word to real-valued vector embedding
- Tweaked optimizations using **GloVe** initialization, layer size, and optimizer to achieve **77% model accuracy**

Latent Factor Recommender System | *NumPy, GridSearchCV* Nov 2024 - Dec 2024

- Implemented **collaborative filtering model** to recommend musics to users based on Jaccard similarity of listener's songs and similarity of song's listeners
- Improved model with hyperparameter tuning of regularization parameters, stochastic gradient descent, and learning rate, increasing model performance to 80%

LEADERSHIP

Association for Computing Machinery (ACM) @ UCSD

La Jolla, CA

Principal Board Member

Oct. 2023 – Present

TECHNICAL SKILLS

Languages: Java, Python, C, C++, SQL (PostgreSQL), JavaScript, HTML/CSS, Assembly

Frameworks: Django, ReactJS, Node.js, JUnit, Flask

Technologies: Git, Docker, Javadoc, Vim, Bash, npm, pip, Docker, Agile, Unix

Libraries: NLTK, scikit-learn, SciPy, pandas, NumPy, Requests, psycopg, Matplotlib, Axios, Cheerio