Yuheng He

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EDUCATION

University of California, Los Angeles — Los Angeles, CA

Master of Science | Electrical and Computer Engineering — *09/2021 – 06/2023*

Courses: Large-Scale Data Mining, Neural Network and Deep Learning, Data Storage System, Natural Language Processing

South China University of Technology

Bachelor of Engineering | Electrical Engineering, Automation — *09/2017 – 07/2021*

SKILLS

Programming: Python, Java, C, C++, R, MySQL, Swift.

Full Stack: HTML, CSS, JavaScript, JSON, REST API, Node.js

ML & AI: PyTorch, TensorFlow, Keras, Scikit-learn, RLlib

Other: MariaDB, Git, AWS, Digital Ocean, Figma

PROFESSIONAL EXPERIENCE

Teaching Assistant — Los Angeles, CA

Class ECE 205A & PIC 40A — *10/2022 – present*

- Assisted in teaching ECE 205A *Matrix Analysis* and PIC 40A *Programming for Internet* (HTML, CSS, JavaScript, PHP, SQL)

Software Development Intern — Remote

EStack Inc (Start-up) — *11/2021 – 03/2022*

- Implemented a responsive, functional real estate listing platform for both buyers and sellers from concept realization, the project including the connection to the housing and user database systems using MySQL run by PHP on Digital Ocean Cloud
- Developed frontend elements featuring user profile dashboard and real estate listing with React, backend systems with Express in Node.js, and generated responses in HTML using Pug
- Spearheaded user interactive website design session with a group of graphic designers on Figma
- Built a search system that filtered desired real estate information, enabling data retrieval from the corresponding database, and visualized the location information using Google Map API

Data Analyst Intern — Guangzhou, China

CNFinance Holdings Ltd — *06/2020 – 07/2020*

- Cleaned, analyzed, and processed over 20,000 crawled data entries of company and financial information daily using Python to generate insight of clients and to support debt collection
- Redesigned the Excel spreadsheets by applying advanced Excel functions such as VLOOKUP to create pivot tables, which boosted work efficiency by 25%

PROJECT EXPERIENCE

Global Market Analysis Heat Map | LA Hacks 2022 PDL *Winner* - Python, React, Node.js, SQL lite (link) — *Spring 2022*

- Reduced the data fields from 3 billion to 1 billion unique data, implemented regex, pivot tables, and merges to flatten nested dicts
- Augmented and imputed for missing values, created 3 significant data metrics for the market analysis
- Developed a web application featuring a search box using React, Node.js and CSS with keyword matching
- Parsed the search keyword from the search box and retrieved company names, longitude, latitude from the refined SQL database
- Visualized metrics filtered data with a heat map using PLOTLY API in JavaScript and rendered an interactive user map interface

Neural Network Mimicking Rodent Neural Activities | Summer Research Project — *Summer 2022*

- Devised a Run and Escape scenario on RLlib featuring reinforcement learning, mimicking dominate and submissive behaviors of rodents, with the goal to design artificial agents that can produce similar neural signals as real rodents
- Implemented different networks (Feedforward, LSTM, RNN) to train the artificial agents to function closely as real rodents
- Extracted neural network activities from the network and analyzed reward data, aligning the data to real world rodent neural signal

Multilingual News Article Similarity (NLP) – Python, S-BERT, TensorFlow — *Spring 2022*

- Crawled a large scale of multilingual news articles using NewsPlease and retrieved body texts and titles of the articles as entry data
- Designed a pipeline that combines data crawling, data preprocessing, word embedding, and networks (CNN & RNN) to perform multilingual articles similarity analysis, achieving a success rate of 65%

Large Scale Twitter Data Mining – Python, R — *Winter 2022*

- Extracted twitter data related to the Superbowl game between Patriots and Sea Hawks and performed feature extraction and dimensionality reduction using PCA, LSI and NMF
- Parsed the processed data using word embedded technique like lemmatization, and implemented classifiers such as L1/L2 Regression, Random Forest, Naïve Bayes to predict fan base of the corresponding tweets and the retweet count
- Analyzed the data using various metrics (confusion matrix, F1 score, etc.), obtaining a result of 90% accurate prediction