HUNG-YI CHANG

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EDUCATION

Master of Science: Computer Science — Expected May 2022
New York University — New York, NY
Bachelor of Arts: Computer Science and Mathematics — May 2020
Boston University — Boston, MA

SKILLS

- Python ● SQL ● Java ● Java Script ● HTML ● CSS
- Data Mining ● Machine Learning ● Statistics ● Data Visualization ● Big Data Analysis ● Database Management

WORK EXPERIENCE

Machine Learning Engineer Intern — January 2022 to present
Payability — New York, USA

- Write SQL to select tables that haven't been used in the past 90 days from Google Big Query and use Looker to build dashboards about the table usage and delete the least used table to enhance efficiency and lower the cost of queries
- Extract transactions from Google Big Query, do exploratory data analysis (EDA), and build machine learning models (LightGBM, ANN, RF) for fraud detection and achieve 99% accuracy and 91% recall
- Clean the data, train data in different time spans, and tune hyperparameters to increase the recall rate from 64% to 91%
- Use Hydra to pass arguments and poetry to manage dependencies and packages to make codes reusable

Data Scientist Intern — June 2019 to August 2019
Feng Chia University — Taichung, Taiwan

- Extracted and processed 200k+ records of river bank details, water level & rainfall in xx region/river from the SQL database, cleansed & transformed the data using Python Pandas & NumPy.
- Conducted exploratory analysis, imputed missing values & treated outliers, created correlation plots with Seaborn.
- Performed PCA & KNN to reduce 68 features to 5 principal components and improved accuracy by 8% as compared to the baseline model.
- Built 4 ANN & RNN machine learning models using Keras & Tensorflow in Python to predict minimum height needed for river embankment, tuned model hyperparameters, and achieved 92% accuracy.
- Applied CRISP-DM methodology to streamline the data science initiative and communicated analytical insights with data-driven task visualizations to stakeholders.

Software Engineer Intern, — June 2018 to August 2018
Feng Chia University — Taichung, Taiwan

- Led a 7-member development team to build a responsive website for Taiwan National Water Resource Department.
- Built the frontend using React and Bootstrap and leveraged Google firebase for backend infrastructure.
- Streamlined system design, applied load balancing across multiple servers, optimized site traffic & decreased refresh rates by 20%.

PROJECTS

Credit Card Fraud Detection — September 2020 to December 2020

- Compared 3 sampling techniques to mitigate class imbalance in the data along with 4 model architectures like ANN, CNN & autoencoders to predict credit card fraud using Keras in Python.
- Incorporated hyperparameter tuning and 5-fold cross-validation to achieve 95%+ accuracy and recall

Predicting Associate Emoji in English and Spanish Tweets — April 2020 to May 2020

- Developed Naive Bayes & Logistic regression algorithms for a given tweet in English & Spanish, predicted the associated emojis with 78.4% accuracy.
- Demonstrated Spanish emoji prediction by mapping and transferring labels from English, which worsen on the application of the Naive Bayes approach.

Google Face Recognition — January 2019 to May 2019

- In charge of developing the website and testing APIs
- Developed facial recognition website to find pictures of users shared publicly online and advise users to delete all pictures that could negatively affect their career opportunities and public image
- Used Kairos face recognition API and Google Custom Search Engine API with React JS, Bootstrap, and Google Firebase database