ZHUOQUAN CHEN

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LinkedIn: https://linkedin.com/in/zhuoquanchen | Portfolio: http://zhuoquan-chen.github.io/portfolio | GitHub: https://github.com/ZhuoquanChen/Data-Science-Projects

ABOUT

With an education in both computer science and data science, I believe that every problem has a solution and many more than one. With a design background, I believe more in the power of imagination and creativity, because everything starts with imagination before it becomes reality. As a data scientist with a diverse background, I like to think from different perspectives and use data science methods and models to help people make more informed decisions.

EDUCATION

General Assembly | Data Science Immersive Course, New York City, NY *Dec 2020*
Brooklyn College | BS. Computer Science, Brooklyn, NY *Aug 2018 – May 2020*
Borough of Manhattan Community College | AS. Computer Science, Manhattan, NY *Aug 2016 – May 2018*
Borough of Manhattan Community College | CUNY Research Scholars Program Scholarship *Aug 2017 – May 2018*

EXPERIENCE

BMCC **Manhattan, NY**
College Assistant, Financial Aid Department *Oct 2017 – Present*

- Worked for data entry, and management of more than 100,000 financial aid applications each academic year.
- Used Python to clean and filter duplicate data and to ensure the names of students will not repeating appear on the calling list.

PROJECTS

Sentiment Analysis & Classification

Skills: NLP / CountVectorizer / Sampling / Naive Bayes / Logistic Regression / GridSearchCV / Confusing Matrix

Used NLP technology that can immediately judge a customer whether satisfy a product or not with their sentiment analysis. It can greatly reduce manual judgment, thus saving lots of time and money for enterprises.

- Visualized the phrases base on key judgment results.
- Naive Bayes Model with 91.7% accuracy for new data.
- Logistic Regression Model with 94.7% accuracy for new data.

Chest Disease Classification

Skills: Residual Neural Network / CNNs / Transfer Learning / Drop out / Data Visualization

Used transfer learning on the pre-trained ResNet (Residual Neural Network) model to automatically diagnose different types of chest diseases such as healthy, covid-19, bacterial pneumonia, and viral pneumonia through chest X-ray images.

- Model testing validation accuracy: 80% with 50 epochs.
- The model has weak performance at precision for covid-19 detection with 68% accuracy.
- The model has weak performance at precision for bacterial pneumonia with 55% accuracy.

Stock Portfolio Analysis

Skills: Covariance/ Normalization / Correlation Matrix / Data Visualization / Markov Chain Monte Carlo Simulation / Sharpe Ratio

This project calculated the optimal weights of the portfolio by analyzing the stocks of Apple, Amazon, Facebook, Google, and Tesla in the past two years, which could have a maximum return with the lowest risk.

- The optimal distribution of the weights in 10,000 simulations: Apple (0.3638), Amazon (0.3377), Facebook (0.0309), Google (0.0063), Tesla (0.2613).

SKILLS

Data Processing: Data Cleaning / Data Visualization / PCA / APIs / Dimensionality Reduction / Feature Engineering.
Machine Learning: Classification Model / Regression Model / Clustering / NLP / Time Series Analysis / Neural Networks / CNNs.
Methods: Statistical Distributions / Bayesian Analysis / p-Values / Hypothesis Testing / Markov Chain Monte Carlo / Data Modeling.
Programming Languages / Environment: Python (Scikit-learn, Numpy, Pandas, Matplotlib, Seaborn, Plotly) / SQL / Java / Jupyter Lab / Google Colab / PySpark.
Software: Microsoft Office (Excel, Word, PowerPoint) / Adobe (Photoshop, Illustrator).
Multilingual: English / Cantonese / Mandarin.

ACTIVITIES

Deep Learning Team, BMCC, Manhattan, NY *Sep 2019 – Jan 2020*
Joined Professor Tang's Deep Learning team researching in CNNs including Neural Network, Softmax, SVM, Regularization, and Fully-connected Neural Network.

CUNY Hackathon 2019, Baruch, Manhattan, NY *Nov 2019*
My team's idea for this competition is to use CNNs to identify the distance and direction of nearby objects, so that blind people can know what is near them.