Sungwan PK Kim

Bayside, New York. 11361

Phone: (847)-894-1953
Blog: nwupkc.github.io
GitHub: https://github.com/nwupkc
Email: sungwankim2017@u.northwestern.edu

EDUCATION

Northwestern University

Bachelor of Arts in **Mathematics** and **Economics**, Cum Laude, graduated in December 2017
Kellogg Certificate Program for Undergraduate in Financial Economics

PROJECTS

Facial Expression Detections

- Developed facial expression detection algorithms using convolutional neural networks with 82% accuracy
- Deployed the model in conjunction with face detection using OpenCV on real-time and pre-recorded videos to identify emotions

NLP on Ancient Eastern Philosophers

- Conducted dynamic topic modeling on works of Confucius, Mencius, Lao Tzu, Sun Tzu and others to evaluate the similarities between authors using non-negative matrix factorization
- Visualized the relationships between thinkers using t-distributed stochastic neighbor embedding (t-SNE) and revealed that Confucianism thinkers deviate substantially from Sun Tzu and Sun Tzu is closer to Niccolò Machiavelli than to other Eastern Philosophers

NYC Yellow Cab Tip Prediction

- Analyzed 7 million NYC yellow cab taxi trip data in logistic regression, support vector classifier, and random forest classifier to predict whether the customers will tip or not
- Identified significant variables leading to customer tipping behavior

Airbnb Postings Price Predication

- Implemented linear regression on scraped Airbnb postings listed in Manhattan to predict the posting price from post specifications
- Applied regularization techniques like ridge, lasso, and elastic net regression to mitigate overfitting in order to improve predictive accuracy and model interpretability

Divvy Bike Sharing Usage Prediction

- Applied machine learning techniques in R to predict future bike-sharing usage so that Divvy can better predict bike demands with increased accuracy
- Improved model accuracy by 10% as measured by root mean squared error (RMSE) from the simple linear regression and decision tree models by building ensemble models such as bagging, random forests, and boosting

EXPERIENCE

Metis
New York, NY
Jan 2018-Present

Data Scientist

- Metis is a 12-week accredited, immersive data science boot camp covering statistics, machine learning, and data visualization. Designed, executed, and presented five end-to-end data projects demonstrating problem conceptualization, data acquisition and processing, modeling and communication. See project section for more details.

Ramirez
Chicago, IL
June-Aug 2015

Investment Banking Intern

- Constructed 14 issuer debt profiles outlining outstanding debts for 6 governmental agencies in Midwest to better analyze for market opportunities
- Contributed in the Request for Proposal process by searching for innovative ways to mitigate client's pension funding liabilities
- Conducted issuer and market research with Comprehensive Annual Financial Reports, EMMA (Electronic Municipal Market Access), Bloomberg, and Official Statements

SKILLS

Programming: Python • Pandas • Numpy • Scikit Learn • Tensorflow • R
Visualization: Matplotlib • Bokeh • Plotly • HTML/CSS
Data: PostgreSQL • Git • Github • AWS • Docker