Yonghyeon Kweon

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EDUCATION

University of Virginia, Charlottesville, VA — May 2020
Master of Data Science

University of Virginia, Charlottesville, VA — May 2019
Bachelor of Arts in Statistics

TECHNICAL SKILLS

Proficient in: Python, R, SAS, Microsoft Office
Experience with: Tableau, C, SQL, HTML, AWS

Research EXPERIENCE

School of Engineering, University of Virginia, Charlottesville, VA — Jun 2020 - Present
Research Assistant

- Designed Federated Learning model with TensorFlow Federated (TFF) to predict a driver's route choice behavior from GPS data.

McIntire School of Commerce, University of Virginia, Charlottesville, VA — Jun 2020 - Present
Research Assistant

- Scrapped movie data from multiple websites and conducted the cleaning/engineering process.

PROJECT EXPERIENCE

Capstone Project *– UVA Biomedical Engineering* — Fall 2019 – Spring 2020

- Training an autoencoder for each protein superfamily using 3D images of protein domains
- Produced loss functions as a similarity metric between different superfamilies. This outcome can be utilized for protein design and to classify novel proteins
- *Technical skills*: **Python, PyTorch, AWS, UVA cloud computing (Rivana)**

Natural Language Processing — Spring 2020

- Analyzed News contents from two different data sources using NLP to compare
- Conducted Sentiment Analysis and Word Embedding to compare different political orientation between sources
- Visualized the result with t-SNE

Technical skills: **Python, NLTK, Gensim, seaborn, plotly_express, scipy, word2vec**

Face Detection with Machine Learning — Spring 2020

- Implemented different architectures and pipelines to classify age, gender and emotion of human faces in real time
- Measure the performance of the result in terms of accuracy and time efficiency

Technical skills: **Python, UVA cloud computing (Rivana), keras, openCV**

Data Mining — Spring 2019

- Used supervised methods to classify authenticity of banknote using the data from UCI ML Repository
- Compared effectiveness of six kinds of classifiers, linear and quadratic discriminant analysis, logistic regression, random forests, support vector machines and Adaboosting based on ROC curves

Technical skills: **R**

Bayesian Machine Learning — Fall 2019

- Modeled the chances of admission into graduate school using Bayesian linear regression
- Utilized hierarchical methods to deal with uncertainty in the prior information
- Considered outcomes in terms of their credible intervals to measure the uncertainty of the results.

Technical skills: **Python, pandas, scikit-learn, pymc3, seaborn, matplotlib**

ADDITIONAL INFORMATION

Research abstract accepted for 2020 Systems and Information Engineering Design Symposium (SIEDS)
Proposal accepted for 2020 TomTom Applied Machine Learning Conference
Research abstract accepted for ISMB2020 (Intelligent Systems for Molecular Biology) Abstract

Research paper submitted for TRB(Transportation Research Board)