Kihong Seong

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EDUCATION

Seoul National University (SNU) | MSc Data Science **March 2020 ~ Present**
Curriculum: Big Data Analytics (DBMS), Programming (Data Structures, Algorithms), Machine Learning, Data Visualization
Elective Courses: Natural Language Processing, Computer Vision, Parallel Programming for GPUs, Recommendation Systems
Dissertation: **Music Streaming Session-based Recommendation with Transformers** | Adviser: Prof. Hyopil Shin
- Developed a novel recommendation system for Spotify's music streaming sessions data, based on Transformer architectures

London School of Economics (LSE) | MSc Management and Strategy **Sep 2018 ~ Sep 2019**
Curriculum: Business Strategy, Managerial Finance, Corporate Governance and Incentives, Informational Economics
Dissertation: **Pricing Strategies and their effects on Event Performance** | Adviser: Dr. Haider Ali
- Regression analysis with R on Olympics ticket data to identify relationship between pricing strategy and event performance

University College London (UCL) | BSc Statistics and Management for Business **Sep 2013 ~ Jun 2018**
Curriculum: Mathematics, Linear Algebra, Probability and Statistics, Linear Models and ANOVA, Computing for Statistics (R)
Elective Courses: Bayesian Inference, Forecasting, Response Surface Modeling, Optimization in Operational Research
- **Brexit Referendum Prediction:** Built a General Linear Model on Brexit voter demographics data with R for predictions

GPA: Graduated with First Class Honors

RESEARCH / WORK EXPERIENCE

GOOGLE | Software Engineer Intern **Jun 2021 ~ Sep 2021**
TensorFlow Model Optimization Team (TFMOT)
- Worked on a research project to analyze relationships between quantization errors and TensorFlow Lite model performance
- Built an Auto Quantization API that automatically removes defective layers during quantization
- Full developer experience; Design Docs, Code Implementation/Review, Test, Version control, Documentation, Presentation

SNU GSDS Ambient NLP Lab | Graduate Research Assistant **Jun 2020 ~ Present**
PI: Professor Hyopil Shin | Website
- **XLNet4Rec**: Session-based recommendation system using XLNet architecture | Github
- **Korean Legal Document Processing**: Preprocessed Korean legal document data to feed into NLP architectures
- Worked as a teaching assistant for a Natural Language Processing course

TECHNICAL PROJECTS

Music-Circles: Interactive Visualization of Music from the Billboard **Oct 2020 ~ Jan 2021**
Links: Website, Github, Paper, Media Publication
- Built an interactive visualization system that allows users to gain understandings of audio features of popular songs
- Implemented a personalized recommendation system based on user responses and audio data using HTML, CSS, JS, D3

Mask Detection and Face Recognition with Google Coral Board **Apr 2020 ~ Jun 2020**
Links: Github, Paper, Media Publication, Talk
- Built a mask detection/face recognition CNN model with transfer learning on TensorFlow based models (MobileNet)
- Used quantization to implement the network onto the Google Coral Board, an edge TPU device using TensorFlow Lite

Pseudo Musician Generation **May 2020 ~ Jun 2020**
- Built a midi file generating model by performing transfer learning on a PyTorch based GitHub open-source model
- Implemented Recurrent Neural Network that trains to produce music that resembles the train data
- Received 1st place in the class for creating a pseudo musician model that outputs the most similar song for a certain artist

Recommendation System with Twitter Graph Database **May 2020 ~ Jun 2020**
- Built a Twitter graph database on Neo4J, that can be utilized for recommendation of users with similar properties
- Implemented a data structure that allows easy visualization and dynamic update of users, features and relationships

SKILLS / CERTIFICATIONS

Computer Languages: Python, C, R, JavaScript (JS), SQL
Libraries/Platforms: TensorFlow, PyTorch, HuggingFace, NLTK, spaCy, jQuery, Neo4j, SAP Hana Express, Apache Spark
Miscellaneous: Git, Mercurial, HTML, CSS, Linux, Google Colaboratory, Jupyter Notebook
Certifications: Microsoft Office Specialist Expert for Excel® Word® Powerpoint® Access® 2016
Languages: English (Native), Korean (Native)