Grace (Hae-Soo) Esther Lee

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EDUCATION

Seoul National University — Seoul, South Korea
Master's in Computer Science, **GPA:4.0/4.3** — Feb 2020

University of Illinois, Springfield — Springfield, Illinois
Bachelor of Arts in Computer Science, Online Degree, **GPA: 3.94/4.0** — Jan 2016 -

Johns Hopkins University — Baltimore, Maryland
Bachelor of Arts in Public Health, **GPA: 3.15/4.0** — Sep 2007 - May 2012

RESEARCH EXPERIENCE

Seoul National University, Database System Lab (dbs.snu.ac.kr) — Seoul, South Korea
Graduate Researcher — Jan 2018 - Feb 2020

- Participated in the following projects: Drug-Drug Interaction Prediction via Machine Learning, Drug Repurposing Through Drug and Adverse Effect Pair Extraction from Published Literature, Introducing NLP technologies into Drug Regulatory System in Korean.
- Designed and implemented feature analysis and graph models to predict the possibility of drug-drug interactions and types of interactions.
- Developed and experimented with diverse document clustering approaches(topic modeling, K-means, Deep Embedded Clustering) to obtain topic relevant documents.
- Built knowledge base construction pipeline for drugs and adverse effects from accumulating published literature data(text, table, XML) to entity recognition(CNN-LSTM, GloVe, ELMo).

EXPERIENCE

Samsung SDS, Agile Core Team (www.samsungsds.com) — Seoul, South Korea
Software Engineer — Aug 2014 - Dec 2017

NexShop Micro Service Architecture, Remote Management System and Marketing Display Player — Jan 2017 - Dec 2017

- Developed a web player application for Tizen display, respective management server, and related APIs with continuous integration and testing environment.
- Served as an anchor of the project.

Daegu Bank Fido Android Library — Aug 2016 - Dec 2016

- Developed android library and API server for Daegu Bank application utilizing Fido(Fast IDentity Online) alliance.

Wellness, Mobile Application for Diabetic Patients — Mar 2016 - July 2016

- Developed a mobile application and respective server system for diabetic patients to monitor health conditions such as daily diets, glucose levels via Bluetooth connection to a glucose meter.

Electronic Health Record Solution — Nov 2014 - Feb 2016

- Develop common library and Delphi components for all hospital departments including patient time-line charts and medical alert components.

Samsung Convergence Software Academy — Seoul, South Korea
Trainee for Computer Science Track — Dec 2013 - June 2014

- Awarded as top final four for the project competition with the real-time health monitoring service system with a connected mobile application for care providers and patients with chronic illness.

TEACHING EXPERIENCE

Seoul National University Big Data Academy, Teaching Assistant — Seoul, South Korea

Jan- Feb 2020, July - September 2019, Nov 2018

- Taught Database systems classes and programming hands-on sessions with MySQL, SQLite, MongoDB, Python, Numpy, Pandas, pymysql, and sqlalchemy.
- Awarded Best TA award for DS(Data Scientist) Training for Samsung Electronics 4th Session (Dec 2019)

PERSONAL PROJECTS

Graph-based Active Learning for Entity Extraction — May 2019 - Feb 2020a

- Implemented and experimented with diverse active learning strategies along with CNN-LSTM models for entity recognition.
- Proposed a novel graph format for graph-based centrality ranking approaches for active learning.
- Master's thesis

Medical Data and Machine Learning Group, SeoulAI — Jan 2019 - Jan 2020

- Analyzed and experimented with diverse definitions of Sepsis and patient cohorts with MIMIC-III.
- Analyzed supplemental sources of medical data for more reliable accumulation and prediction.

Medical Informatics Analysis - Advanced course(Asan Hospital, Seoul) — Oct 2018 - Dec 2018

- Experimented with diverse medical informatics analysis technologies from genomics to EHR and applied to a data analysis project for predicting unexpected readmission of patients with liver diseases.

Interactive System of Document Clustering — Sep 2018 - Feb 2019
https://github.com/joyce04/electron_visualization

- Developed a user support system of comparing document clustering algorithms of Latent Dirichlet Allocation, K-means, and Deep Embedded Clustering to extract target clusters for relation extraction.
- *Publication in progress*

Football Analysis (Winning Goal, Key Performance Indicators) — Dec 2017 - Aug 2018
https://github.com/madigun697/football_data_analysis.git

- Collected football data via crawling and converting PDF files and analyzed the impact of the first goal of winning and trends of goals time through statistics and machine learning

TECHNICAL SKILLS

Programming/Languages	Python(2017-Present), Electron(2016-2018), Java6-8(2014-Present), Android(2016-2017), Javascript ES6(2017), Spring(2014-2017), D3(2018-Present), AWS(S3, EC2), Docker, Mockit(2016-2018), Node.js(2016-2017), Delphi(2014-2015)
Database Management	Oracle RDBMS(2014-2015), MariaDB(2016-Present), PostgreSQL(2018-Present), MongoDB(2017-Present), SQLite(2018), MySQL(2018-Present)
Machine Learning	networkx(2018-Present), Keras(2017-Present), Tensorflow(2017-Present), nltk, gensim, spaCy
Tools	DataGrip, IntelliJ, pyCharm, JIRA, Git, Android Studio, GoCI, Jupyter Notebook, Slack