

INTERESTS

Social Media Analysis
Fairness in AI
Domain Adaptation

EDUCATION

Arizona State University

Tempe, AZ

Ph.D. Student in Computer Science

Jan. 2021 –

- **Affiliated lab:** Data Mining & Machine Learning Lab (Advisor: Prof. Huan Liu)
- **Funded by:** DHS-CAOE, Office of Naval Research(ONR), MATHPRESSO

Korea University

Seoul, South Korea

Master of Science in Computer Science & Engineering

Mar. 2017 – Feb. 2019

- **Affiliated lab:** Data Mining & Information Systems Lab (Advisor: Prof. Jaewoo Kang)

Korea University

Seoul, South Korea

Bachelor of Engineering in Computer Science & Engineering

Mar. 2013 – Feb. 2017

TECHNICAL SKILLS

Languages: Python, Javascript, C, SQL, Java

Skills: Data analysis using Python, PyTorch, Keras, Numpy, Scikit, Docker and Google Cloud Platform

WORK EXPERIENCE

DHS-CAOE

Tempe, AZ

Graduate Research Assistant

May 2022 – Present

Building a comprehensive dashboard of data analyzing using topic modeling and text summarization

ONR

Tempe, AZ

Graduate Research Assistant

Jan. 2021 – Aug. 2022

Researched on Online-to-Offline connection of COVID-19 data

MATHPRESSO

Tempe, AZ

Research Assistant

Jan. 2021 – May 2021

Worked on a project to convert image-based mathematical problems into latex formula

PUBLICATIONS

Bridge the Gap: the Commonality and Differences Between Online and Offline COVID-19 Data 2022
SBP-BRiMS

Debiasing Word Embeddings with Nonlinear Geometry COLING 2022

SELECTED PROJECTS

Relation Extraction

Extract Biomedical entities and identify their relation existence

Jan. 2018 - Dec. 2018

- **Data collection:** Comparative Toxicogenomics Database(CTD) provided chemical-gene, chemical-disease, and gene-disease relation data collection through distant supervision as a complementary training data.
- **Binary relation classification:** Train tree-RNN based model SPINN along with word-character embedding model CharWNN.

Named Entity Recognition

Biomedical entity recognition on a large-scale biomedical literature

Nov. 2017 - Jan. 2018

- **Training data collection:** BioCreative II Gene Mention task corpus (BC2), NCBI disease corpus (NCBI), JNLPBA corpus.
- **Train word embeddings:** Train GRAM-CNN model based on n-gram character and word embeddings.

Language Modeling

Train joint word and character embeddings to utilize morphological information of words

Oct. 2017 - Jan. 2018

- **Web data crawling and preprocessing:** Combination of all publication abstracts from PubMed and all full-text documents from the PubMed Central Open Access subset.
- **Word-character embedding:** Train charWNN model based on CNN for word-character embedding

Object Detection and Image Classification

Detection and classification of blood cells from blood smear test image

Aug. 2017 - Dec. 2017

- **Data preprocessing:** Detect and crop blood cell regions in blood smear test images using OpenCV. Label blood cells with their cell types.
- **Multi-class image classification:** Train AlexNet model to classify blood cell type using Tensorflow.
- **Web application:** Designed a web server using Flask Python library to test the trained model. Uploaded blood smear test image files are saved at server temporary and feed-forwarded. Result page shows types of cells in uploaded file and each counts.

Question Answering

Built neural network models for Question Answering task

Mar. 2017 - July. 2017

- **Dataset:** SQuAD, The Stanford Question Answering Dataset.
- **QA modeling:** TF-IDF document ranker for retriever & combination of FastText and RNN for reader and ranker.

PRESENTATION

Entity Relation Extraction on Multiple Sentences with Encoder and Relation Representation, Korea Computer Congress (KCC '18), Jeju, Republic of Korea

AWARDS AND HONORS

Fulton Scholarships

Jan 2021 - July 2021

Ira A. Fulton Schools of Engineering, Arizona State University

- Part of tuition (3,000 USD for 1 semester) provided to qualified graduate students in the Ira A. Fulton Schools of Engineering

General Scholarships

Aug 2017 - Feb 2018

College of Information, Korea University

- Part of tuition (1,250,000 KRW for 1 semester) provided to master degree students in the College of Information

Work-Study Scholarships

Mar 2015 - July 2015

Korea University

- Third-tuition (1,694,000 KRW for 1 semester) provided to work-study students in the Department of Computer Science & Engineering, Korea University

Academic Excellence Scholarships

Mar 2013 - July 2013

College of Information & Communication, Korea University

- Full tuition (4,416,000 KRW for 1 semester) provided to top 6% freshmen in the College of Information & Communication

TEACHING EXPERIENCE

KU JUMP Tutor

Seoul, South Korea

Korea University, Seongbuk-gu Office, JUMP, Inc.

Mar 2015 - Feb 2016

- Taught high school students the 'Artificial Intelligence Basic course'.
- Specialization in the basics of A.I. theory and machine learning.
- Held practice sessions for implementation of machine learning applications.
- Scholarship (800,000 KRW) provided to tutors selected for best tutoring classes.

Teaching Assistant

Tempe, AZ

CSE 205

Aug 2021 - May 2022

- Taught high school students the 'Artificial Intelligence Basic course'.

EXTRACURRICULAR ACTIVITIES

Volunteer at WSDM 2021 conference

Volunteer at KDD 2021 conference

Reviewer at