

Ikhee Shin

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EDUCATION

University of Michigan

M.S. Electrical and Computer Engineering

Ann Arbor, MI

Aug. 2021 – Present

Yonsei University

B.S. Electrical and Electronic Engineering

Seoul, Korea

Mar. 2013 – Aug. 2019

WORK EXPERIENCE

Samsung Research

Engineer, Natural Language Processing Lab

Seoul, Korea

Aug. 2019 – July 2021

- **On-device Natural Language Understanding Service** | *C++, Java, Python, TensorFlow*
 - * Built the C++ based app for Samsung Research's on-device natural language understanding service for Bixby, a virtual assistant with more than 10 million active users
 - * Developed the automatic on-device model preparation pipeline for quantized model and model resources
 - * Cooperated with the overseas branch of Samsung Research (America) to train and compress models for Korean and English languages
 - * Decreased the latency of the natural language understanding model by 40% by applying sequence slicing to the BERT model
- **Dialogue State Tracking Research and Development** | *Python, Keras, Flask*
 - * Designed the baseline pre-processing and training code for experiments with span-based dialogue state tracking models, reaching joint accuracy 70% in internal test data
 - * Applied data augmentation and multi-task learning techniques to overcome data sparsity problems, improving the joint accuracy by 5%

NAVER Co.

Clova Machine Learning Intern, NAVER Clova AI Research

Seongnam, Korea

July 2018 – Aug. 2018

- **Animation Character Recommendation System** | *Python, PyTorch, Flask*
 - * Modeled application that extracts face attributes from images and recommends an animated character with similar attributes
 - * Improved the classification accuracy by 3% by sharing a fully connected layer among attributes with correlation

NAVER Co.

Clova Multimedia Intern, NAVER Clova AI Research

Seongnam, Korea

Jan. 2018 – June 2018

- **Text-to-Video Development** | *Python, PyTorch*
 - * Devised the baseline pre-processing and training code for the text-to-video model
 - * Implemented the state-of-the-art models such as Obamanet

Republic of Korea Air Force

Sergeant, Ground Operation Center

Seosan, Korea

Feb. 2014 – Feb. 2016

- Cooperated with Air Defense Artillery to protect the force and selected geopolitical assets from an aerial attack

RESEARCH EXPERIENCE

Situated Language and Embodied Dialogue Lab, University of Michigan

Graduate Research Assistant (Advisor: Professor Joyce Y. Chai)

Ann Arbor, MI

Jan. 2022 – Present

- Developed a dialogue system for the guide robot in the building of the University of Michigan.

Digital Signal Processing and Artificial Intelligence Lab, Yonsei University

Undergraduate Research Assistant (Advisor: Professor Hong-Goo Kang)

Seoul, Korea

Sept. 2018 – Dec. 2018

- Engineered music source separation based on U-Net style architecture, followed by improving the accuracy of the model by 2% by utilizing self/cross attention

Multimedia Security Lab, Yonsei University

Undergraduate Research Assistant (Advisor: Professor Andrew Beng Jin Teoh)

Seoul, Korea

Aug. 2017 – Jan. 2018

- Applied GAN to semi-supervised training to train the classification model with 10 times fewer data