Ikhee Shin

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EDUCATION

University of Michigan — Ann Arbor, MI
M.S. Electrical and Computer Engineering — *Aug. 2021 – May 2023*

Yonsei University — Seoul, Korea
B.S. Electrical and Electronic Engineering — *Mar. 2013 – Aug. 2019*

WORK EXPERIENCE

Samsung Research — Seoul, Korea
Research Engineer, Natural Language Processing Lab — *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 50% 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. — Seongnam, Korea
Clova Machine Learning Intern, NAVER Clova AI Research — *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. — Seongnam, Korea
Clova Multimedia Intern, NAVER Clova AI Research — *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 — Seosan, Korea
Sergeant, Ground Operation Center — *Feb. 2014 – Feb. 2016*

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

RESEARCH EXPERIENCE

Digital Signal Processing and Artificial Intelligence Lab, *Yonsei University* — Seoul, Korea
Undergraduate Research Assistant (Advisor: Professor Hong-Goo Kang) — *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* — Seoul, Korea
Undergraduate Research Assistant (Advisor: Professor Andrew Beng Jin Teoh) — *Aug. 2017 – Jan. 2018*

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

TECHNICAL SKILLS

Languages: Python, C/C++, Java
Libraries: TensorFlow, Keras, PyTorch
Frameworks: Flask, JMeter