# 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
  * Implemented the state-of-the-art multi-label classification models and metric learning such as contrastive and triplet for face attributes classification

**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