

# YOONHYUNG LEE

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## RESEARCH INTERESTS

I am currently pursuing my Ph.D. at the Machine Intelligence Lab, Seoul National University, under the guidance of Professor Kyomin Jung. My research has primarily focused on Text-to-Speech (TTS), particularly aligning text and speech modalities and separating linguistic information from other prosodic elements such as pitch and energy. My current research are centered on disentangling various speech components to enhance the performance and controllability of deep learning models across a range of speech processing tasks. In particular, I am interested in uncovering linguistic information in speech for Textless-NLP applications such as speech translation, an area I believe holds potential to bring people from all over the world closer together.

## EDUCATION

Ph.D. Candidate, Electrical and Computer Engineering, Seoul National University, Mar. 2019 ~  
Current, Machine Intelligence Laboratory (Advisor: Kyomin Jung)

B.S., Electrical and Computer Engineering, Seoul National University, Mar. 2012 ~ Feb. 2019

## INDUSTRY EXPERIENCE

**SAMSUNG ELECTRONICS, SEOUL, KOREA, JAN. 2018 ~ FEB. 2018**

As an Internship program, I worked at advanced CP Lab in Samsung Electronics IT & Mobile Communications division.

**NCSoft SPEECH AI LAB, PANGYO, KOREA, JUL. 2021 ~ AUG. 2021**

As an Internship program, I worked at Speech AI Lab in NCSoft, and I researched about controlling expressiveness in Text-to-Speech.

## PUBLICATIONS

·Yoonhyung Lee, Jinhyeok Yang, and Kyomin Jung, VarianceFlow: High-quality and Controllable Text-to-Speech Using Variance Information via Normalizing Flow, ICASSP 2022.

·Yoonhyung Lee, Joongbo Shin, and Kyomin Jung, Bidirectional Variational Inference for Non-Autoregressive Text-to-Speech, International Conference on Learning Representation (ICLR) 2021.

- **Yoonhyung Lee**, Seunghyun Yoon, and Kyomin Jung, Multimodal Speech Emotion Recognition Using Cross Attention with Aligned Audio and Text, Interspeech 2020.
- Joongbo Shin, **Yoonhyung Lee**, Seunghyun Yoon, and Kyomin Jung, Fast and Accurate Deep Bidirectional Language Representations for Unsupervised Learning, Annual Meeting of the Association for Computational Linguistics (ACL) 2020.
- Joongbo Shin, **Yoonhyung Lee** and Kyomin Jung, Effective Sentence Scoring Method Using BERT for Speech Recognition, Asian Conference on Machine Learning (ACML) 2019.
- **Yoonhyung Lee**, Yanghoon Kim, and Kyomin Jung, MILAB at SemEval-2019 Task 3: Multi-View Turn-by-Turn Model for Context-Aware Sentiment Analysis, SemEval@NAACL-HLT 2019.
- Sungho Joo, **Yoonhyung Lee**, and Kyomin Jung, Emotional Text-to-Speech with Variational Autoencoder using a Multimodal Gaussian Prior, Korea Computer Congress (KCC) 2021. **(Top 10% of the accepted papers)**
- Sungyoon Kim, Joongbo Shin, **Yoonhyung Lee**, and Kyomin Jung, Improving Data Augmentation in cGANS by Feature Vector Diversification, Korea Computer Congress (KCC) 2020.

## RESEARCH PROJECTS

- **Development and Study of AI Technologies to inexpensively Conform to Evolving Policy on Ethics**, funded by Institute of Information & Communications Technology Planning & Evaluation (IITP), May. 2022 ~ Current
- **Credibility of Large-scale Language Models and their Application to Knowledge Based Dialogue Models**, funded by NAVER CLOVA AI RESEARCH, May. 2022 ~ Jan. 2023
- **Developing machine intelligence based conversation system that detects situations and responds to human emotions**, funded by Ministry of Trade, Industry & Energy (MOTIE, Korea), Jul. 2019 ~ Feb. 2022

## SCHOLARSHIPS

- YOULCHON AI STAR SCHOLARSHIPS, SEOUL, KOREA, JUL. 2022**  
Granted by Nongsim Youlchon Foundation
- SAMSUNG ELECTRONICS, SEOUL, KOREA, JUL. 2018 ~ DEC. 2018**  
As a research scholarship student, I did a project to build an IoT chatbot using deep learning.

## ACADEMIC SERVICES

- Reviewer, ICML 2023
- Reviewer, ICLR 2022
- Reviewer, NeurIPS 2021

## SKILLS

- Deep Learning Libraries: TensorFlow, Pytorch
- Programming Languages: Python, C++, JAVA
- Languages: Korean (Native), English (Intermediate)