# Huu Kim Nguyen

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## Interests

**Speech Signal Processing, Deep Learning**

*Speech synthesis, voice conversion, generative adversarial networks*

## Education

**Yonsei University** — Seoul, Korea

*M.S. in Electrical and Electronic Engineering* — *Sep. 2019 – Present*

- Digital Signal Processing & Artificial Intelligence (DSP&AI) Lab. (Prof. Hong-Goo Kang)
- Major: Speech signal processing, Deep learning

**Hanoi University of Science and Technology** — Hanoi, Vietnam

*B.S. in Electronic and Telecommunication Engineering* — *Sep. 2013 – Aug. 2018*

- Signal Processing and Radio Communication (SPARC) Lab. (Prof. Huy-Dzung Han)
- Major: Hardware design, FPGA design, Internet of Things, Machine learning

## Experience

**Graduate Researcher** — Sept. 2019 – Present

*DSP&AI lab - Yonsei University* — *Seoul, Korea*

- Research speech-related topics e.g. speech synthesis, voice conversion
- Research solutions for speech synthesis on-device applications

**AI Engineer** — Mar. 2019 – Aug. 2019

*NTQ Solution JSC.* — *Hanoi, Vietnam*

- Study solutions for various practical problems e.g. face, license plate recognition, gesture estimation
- Participate in a development project of beauty face application

**Undergraduate Research Assistant** — Jan 2017 – Feb. 2019

*SPARC lab - Hanoi University of Science and Technology* — *Hanoi, Vietnam*

- Build a smart algae cultivation system based on IoT platform
- Develop a secure remote FPGA reconfiguration method even while the device is in operation

## Publications

[1] Thi-Thai Yen Doan, Minh-Tri Ho, **Huu-Kim Nguyen**, and Huy-Dung Han. "Optimization of Spirulina sp. Cultivation using Reinforcement Learning with State Prediction based on LSTM Neural Network". In: *Journal of Applied Phycology* (2021).

[2] Kihyuk Jeong, **Huu-Kim Nguyen**, and Hong-Goo Kang. "A Light and Fast Text-To-Speech Model with Spectrum and Waveform Alignment Algorithms". In: *Proc. EUSIPCO*. 2021.

[3] **Huu-Kim Nguyen**, Kihyuk Jeong, and Hong-Goo Kang. "A Fast and Lightweight Speech Synthesis Model based on FastSpeech2". In: *Proc. ITC-CSCC*. 2021.

[4] **Huu-Kim Nguyen**, Kihyuk Jeong, Seyun Um, Min-Jae Hwang, Eunwoo Song, and Hong-Goo Kang. "LiteTTS: A Decoder-free Lightweight Text-to-wave Synthesis Model Based on Generative Adversarial Networks". In: *Proc. INTERSPEECH (submitted)*. 2021.

## Projects

**Development of Attribute Controllable Natural Keyword Speech Generation Method** — Qualcomm Korea

*Speech augmentation in preparation for automatic speech recognition* — Nov. 2019 – Jun. 2020

- Research multi-speaker text-to-speech for speech data augmentation
- Research non-parallel voice conversion to synthesize speech utterances

**Real-time Neural Text-to-speech on CPU Device** — Naver Corp.

*Effective text-to-speech model for on-device applications* — Oct. 2020 – Present

- Design a small-sized, fast-synthesizing text-to-speech model for portable devices
- Research non-autoregressive Transformer-based speech synthesis

## Skills

**Programming Languages**: Python, Latex, Java, C/C++
**Frameworks**: Pytorch, Tensorflow, Flask
**Developer Tools**: Git, Docker, Vim, PyCharm
**Libraries**: NumPy, pandas, Matplotlib, librosa
**Languages**: Vietnamese (native), English (advanced), Korean (beginner)

## Miscellaneous

### Awards and Achievements

*Top 5 in IoT startup competition 2017* — *Hanoi, Vietnam*
*Poster at Conference – Vietnam International Water Week – VACI 2018* — *Hanoi, Vietnam*
*Award for Excellent Student of School of Electronics and Telecommunication (semester 20161)* — *Hanoi, Vietnam*