

# Liu, Jeongmin

劉政旼

AI/ML Engineer in Voice Model team, Naver Cloud Corp.

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## Skills

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### Deep Learning

- Text-to-Speech (TTS)
- Speech Enhancement / Refinement
- Speech Quality Estimation

### Signal Processing

- Speech Signal Processing
- Multi-channel Audio / Acoustic Array Signal Processing

### Programming

- **Intermediate:** Python (TensorFlow, PyTorch, Flask), C, MATLAB
- **Basic:** Rust, C++, MySQL
- **Experienced:** Java, .Net Framework, Unity (C# script)

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## Career

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### AI/ML Engineer | Voice Model team, Naver Cloud Corp.

Jan 2020 - Dec 2022 (Naver), Jan 2023 - Now (Naver Cloud)

- Text-to-Speech (TTS)
  - Vocoder Model
    - Autoregressive model based on LPCNet
    - Non-autoregressive model based on GAN or Flow
  - Acoustic Model
    - Duration-informed model
    - Attention-based model
    - Emotional TTS based on VAE
- Speech Enhancement / Refinement
  - Universal Speech Enhancement (based on Diffusion model)
    - De-noising, De-reverberation, Auto-EQ
  - De-noising (based on Signal processing)
  - Auto-EQ (based on Signal processing)
- Speech Recording Quality Estimation
  - Signal-to-Noise Ratio Estimation
  - Wind Noise / Plosive Sound Detection
  - Voice-activity Detection (Signal Processing / Deep learning)
- Model Serving / Ops
  - TTS API server
  - TTS fonts (models per speakers) management system (DB / API server)

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## Education

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### M.S. in Electrical Engineering | KAIST

Mar 2018 - Feb 2020

- **Thesis** Speech Dereverberation using 3-Dimensional Acoustic Intensity Based on Deep Neural Networks

### B.S. in Electrical Engineering | POSTECH

Mar 2013 - Feb 2018

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## Presentations

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### Custom Voice Pipeline II | DEVIEW 2020 (Korean)

Dec 1st 2020

- I presented a custom voice pipeline system which automatically creates a TTS model of anyone's voice. With that system, people only need to record a few sentences with their cell phones to get a TTS model of their own voices.
- **Video** [deview.kr/2020/sessions/354](https://deview.kr/2020/sessions/354)

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## Papers

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### Conference Paper

Jeongmin Liu, Byeongho Jo, Jung-Woo Choi, **Dereverberation Based on Deep Neural Networks with Directional Feature from Spherical Microphone Array Recordings**, in Proc. of the 23rd International Congress on Acoustics (ICA 2019), Aachen, Germany, September 9-13, 2019.

- In the paper, the authors propose a method that uses spatially-averaged acoustic intensity vector as an input feature of the DNN in order to make the DNN perform speech dereverberation by considering spatial information.
- **Paper** [sytronik.github.io/assets/ICA2019.pdf](https://sytronik.github.io/assets/ICA2019.pdf)  
**GitHub** [github.com/Sytronik/dereverberation-directional-feature](https://github.com/Sytronik/dereverberation-directional-feature)

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## Side Projects

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### Thesia: Multi-track Spectrogram / Waveform Viewer

Nov 2020 - Now

- A GUI app that shows multi-track spectrograms and waveform envelopes
- My role is backend development with Rust.
- **GitHub** [github.com/Sytronik/thesia](https://github.com/Sytronik/thesia)

### pYIN-rs

Apr 2022

- A Rust version of pYIN algorithm, one of pitch detection algorithms
- **GitHub** [github.com/Sytronik/pyin-rs](https://github.com/Sytronik/pyin-rs)

### Deep Griffin-Lim Iteration

Sep 2019 - Oct 2019

- An implementation of a paper "Deep Griffin-Lim Iteration"
- **GitHub** [github.com/Sytronik/deep-griffinlim-iteration](https://github.com/Sytronik/deep-griffinlim-iteration)