

Woongjib Choi

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RESEARCH INTERESTS

Audio and Speech Signal Processing, Audio Compression, Digital Signal Processing, Generative Models

EDUCATION

Massachusetts Institute of Technology

Incoming Ph.D. Student in Electrical Engineering and Computer Science

Sep. 2026 –

Cambridge, MA, USA

- Advisor: **Prof. Paris Smaragdis**

Yonsei University

M.S. in Electrical and Electronic Engineering

Mar. 2024 – Feb. 2026

Seoul, South Korea

- Advisor: **Prof. Hong-Goo Kang**
- GPA: 4.08 / 4.30

Yonsei University

B.S. in Electrical and Electronic Engineering

Mar. 2018 – Feb. 2024

Seoul, South Korea

- Includes two-year mandatory military service (Apr. 2020 – Oct. 2021)
- GPA: 3.83 / 4.30

RESEARCH EXPERIENCE

Postgraduate Researcher

DSPAI Lab, Yonsei University

Mar. 2026 – May 2026

Seoul, South Korea

- Conducted research on **neural audio codecs**, **tokenization**, and **generative models** for audio.
- Collaborated with **Prof. Yongshik Lee** on vehicle state classification from unintentional electromagnetic emissions, including STFT-based signal analysis and DNN-based classification.

Graduate Researcher

DSPAI Lab, Yonsei University

Mar. 2024 – Feb. 2026

Seoul, South Korea

- Developed **bandwidth extension** methods via **flow matching** and **self-supervised representations**.
- **ETRI-Yonsei Joint Research Project**: Led development of DNN-based post-processing for legacy audio codecs. Served as project leader in the final 6 months, resulting in 1 int'l conference paper, 1 domestic paper, and 1 patent.

Undergraduate Research Intern

SRIP Lab, Yonsei University (Supervised by **Prof. Moon Gi Kang**)

Jun. 2023 – Jan. 2024

Seoul, South Korea

- Implemented classical and deep learning-based image processing algorithms including white balancing, denoising, demosaicing, and super-resolution.
- Undergraduate thesis: *A Technical Overview of Deep Learning-Based Single-Image Super-Resolution Methods*

PUBLICATIONS

Peer-Reviewed Publications

- [1] Sangmin Lee, Woojin Chung, **Woongjib Choi**, and Hong-Goo Kang, “MoLGE: Mixture of Language Group Experts for Efficient Scaling of Massively Multilingual Speech Recognition,” in *Conference on Language Modeling (COLM)*, 2026.
- [2] Sangmin Lee, Eekgyun Ahn, **Woongjib Choi**, and Hong-Goo Kang, “UR-BERT: Scaling Text Encoders for Massively Multilingual TTS Through Universal Romanization and Speech Token Prediction,” in *INTERSPEECH*, 2026. [\[paper\]](#)
- [3] **Woongjib Choi**, Sangmin Lee, Hyungseob Lim, and Hong-Goo Kang, “UniverSR: Unified and Versatile Audio Super-Resolution via Vocoder-Free Flow Matching,” in *ICASSP*, 2026. [\[paper\]](#) [\[demo\]](#) [\[code\]](#)

- [4] **Woongjib Choi**, Byeong Hyeon Kim, Hyungseob Lim, Inseon Jang, and Hong-Goo Kang, “Neural Spectral Band Generation for Audio Coding,” in *INTERSPEECH*, 2025. [paper]

Preprints & Submissions

- [5] Sangmin Lee, **Woongjib Choi**, Jihyun Kim, and Hong-Goo Kang, “SAGE-LD: Towards Scalable and Generalizable End-to-End Language Diarization via Simulated Data Augmentation,” *arXiv preprint*, 2025. [paper]

Domestic Publications

- [6] Jaehun Shin, **Woongjib Choi**, Byeong Hyeon Kim, Inseon Jang, and Hong-Goo Kang, “DNN-based Speech Codec Enhancement Utilizing Conditional Flow Matching,” in *Proc. KIBME Conf.*, 2025.
- [7] **Woongjib Choi**, Byeong Hyeon Kim, and Hong-Goo Kang, “Non-Blind Speech Bandwidth Extension Using Pre-Trained Self-Supervised Features,” in *Proc. IEIE Conf.*, 2024.

PATENTS

Encoder and Decoder for Audio Coding Using Side Information Generated from Original Signal and Method of Operation Thereof	KR 10-2025-0096305
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TEACHING EXPERIENCE

Teaching Assistant	Mar. 2024 – Jun. 2025
<i>Department of Electrical and Electronic Engineering, Yonsei University</i>	Seoul, South Korea
• EEE2111: Analog Electronics Lab (Spring 2025) • EEE2060: Signals and Systems (Fall 2024) • EEE4610: Capstone Design (Fall 2024) * Advised project on unified speech enhancement bridging personalized and unconditional models. • EEE4420: Digital Signal Processing (Spring 2024)	

AWARDS & HONORS

Dean’s List , Yonsei University (top 3% of college)	Spring 2023
Academic Excellence Scholarship , Yonsei University	Spring & Fall 2023

SKILLS

Programming: Python, MATLAB, C/C++, Verilog	• Frameworks: PyTorch, torchaudio, NumPy, SciPy, Librosa
Tools: Linux Shell, Git, Arduino, Xilinx Vitis/Vivado	• Languages: Korean (native), English (TOEFL 104)

EXTRACURRICULAR ACTIVITIES

Editor-in-Chief , <i>Humans of Yonsei</i> (Student Storytelling and Interview Organization)	Mar. 2022 – Jun. 2023
Sergeant , Republic of Korea Army (Repair Parts and Tool Supply Specialist)	Apr. 2020 – Oct. 2021
Freshman Class Representative , Dept. of EEE, Yonsei University	Mar. 2018 – Sep. 2018