Jayeon Jason Yi

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Education

University of Illinois Urbana-Champaign **Aug 2025 – Current**
PhD in Computer Science / Advised by Prof. Minje Kim *current GPA: 4.00+ / 4*

University of Michigan, Ann Arbor, MI **Aug 2023 – Aug 2025**
MS in Electrical and Computer Engineering *GPA: 4.00 / 4.00*

Seoul National University, Seoul, Republic of Korea **Mar 2018 – Aug 2023**
Bachelor of Science in Electrical and Computer Engineering *GPA: 4.19 / 4.30 (3.97 / 4.00); Rank 7/148*

Skills

Languages: Python (very fluent), Modern C++ (moderate) / C, MATLAB, Julia, Javascript (coursework-level)
Music Composition: FL Studio. A few pieces provided/sold to labels and games. Also a bit of MAX

Experience

Audio Lab, University of Illinois Urbana-Champaign **Aug 2025 – Current**
PhD Student / Supervised by Prof. Minje Kim *Champaign, IL*

- Showed that "linguistic losses" help improve very-low-bitrate speech coding. (Submitted to ICASSP 2026)

Amazon.com, Inc. **May 2024 – Aug 2024 / May 2025 – Aug 2025**
Applied Scientist Intern, Hardware-Technology & Architecture *Sunnyvale, CA*

- Successfully conducted two internship projects on audio coding and multi-talker speech separation.
- Aided internal dataset curation efforts.

DNN/CV Group, University of Michigan **Sep 2023 – May 2024**
Temporary Research Assistant / Supervised by Prof. Hun-Seok Kim *Ann Arbor, MI*

- Compared lens distortion correction & prediction algorithms for multi-lens image array compression
- Wrote "golden-reference" MATLAB code for hardware designers. (Submitted to ISSCC 2026)

Music and Audio Research Group, Seoul National University **Jul 2022 – Jun 2023**
Student Intern / Supervised by Prof. Kyogu Lee *Suwon, Gyeonggi Province, Republic of Korea*

- Researched real-time-capable, low-latency models for speech declipping (ICASSP 2024, below)
- Investigated automated content generation for rhythm-oriented games (ISMIR 2023 LBD, below)

Selected Projects/Publications

Yi, J., Koo, J., Lee, K. (2024). **"DDD: A Perceptually Superior Low-Response-Time DNN-based Declipper."** *Accepted to ICASSP 2024* (Link to preprint & code)

- Utilized adversarial learning objectives to improve speech declipping performance.
- Surveyed various speech enhancement / source separation models, finding many fail to converge for the declipping task
- MUSHRA-like subjective test shows our method outperforms previous SOTA on heavily clipped speech (SNR=1dB)
- Qualitative analysis showed generative loss is effective in reconstructing higher-order formants
- Objective analysis showed our method faithfully retrieves original speech, despite using generative loss

Yi, J., Lee, S., Lee, K. (2023). **"Beat-Aligned Spectrogram-to-Sequence Generation of Rhythm-Game Charts."** *Accepted to ISMIR 2023 Late-Breaking/Demo (LBD) Session* (Link to preprint & code)

- Task resembles music onset detection / transcription; given music and metadata, "charts" - directions for video game players to perform certain actions in sync with the music - are generated
- Reformulated the problem as a "Spectrogram-to-Sequence" problem, removing binary class imbalance
- Proposed to beat-align and length-normalize training samples - a procedure found to be integral for successful training
- Gathered, filtered, and preprocessed the dataset from scratch, optimizing data for optimal training throughput
- Outperforms past approaches in rhythmical correctness, measured in micro-F1 scores

Honors

Amazon AI PhD Fellowship **2025 – Ongoing**

- Offered to some first-year PhD students in UIUC who have topic alignment with Amazon's interests.

Presidential Science Scholarship (Republic of Korea) **2022 – 2023**

- Full Tuition Scholarship awarded to ∼150 STEM students nationwide, on behalf of the president of ROK

Merit Scholarship (Seoul National University) **2018 – 2022**

- Full Tuition Scholarship based on GPA. Selected for five consecutive semesters