Jayeon Jason Yi

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Summary

A PhD student with **experience in DNN-based speech / audio codecs**, seeking to extend interests & expertise in audio and AI in a **Research Internship**.

Education

University of Illinois Urbana-Champaign, IL **Aug 2025 – Current**
PhD in Computer Science

- Advisor: Prof. Minje Kim
- Honors: Amazon AI PhD Fellowship
- Interests: Neural codecs, source separation, Music information retrieval, etc.

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

- Temporary RA under Prof. Hun-Seok Kim; Image compression algorithms for multi-lens array

Seoul National University, Seoul, Republic of Korea **Mar 2018 – Aug 2023**
Bachelor of Science in Electrical and Computer Engineering

- Intern (Jul 2022 - Jun 2023) in Music and Audio Research Group, Supervised by Prof. Kyogu Lee
- Honors: Presidential Science Scholarship, Merit Scholarship (five semesters)
- GPA: 4.19 / 4.30 (3.97 / 4.00); Rank 7/148

Work Experience

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

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

Samsung Electronics Co., Ltd **Jan – Feb 2020**
Student Intern, C-LAB *Seoul, Republic of Korea*

- Wrote a HTTP server that automatically labels and segments in-house video object segmentation (VOS) dataset
- Presented and participated in seminars related to Deep-learning and Computer-Vision

Publications

Yi, J. and Kim, M. (2025). **"From Hallucination to Articulation: Language Model-Driven Losses for Ultra Low-Bitrate Neural Speech Coding,"** *Submitted to IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP) 2026, demo/code in preparation.*

- Proposed two variants of language-model based losses (LM loss), taking advantage of rich semantic information in models that match speech to text (e.g. ASR, timed-text regularization)
- Showed LM losses can alleviate "phoneme hallucinations" in a very-low-bitrate reference codec, widening the breadth of acoustic-semantic tradeoff than allowed by a semantic distillation objective

Yi, J., Koo, J., & Lee, K. (2024). **"DDD: A Perceptually Superior Low-Response-Time DNN-Based Declipper."** In 2024 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP) (pp. 801-805). IEEE. (Link to preprint & code)

- Utilized adversarial learning objectives to improve speech declipping performance. Ran MUSHRA-like subjective tests

Yi, J., Lee, S., & Lee, K. (2023). **"Beat-Aligned Spectrogram-to-Sequence Generation of Rhythm-Game Charts."** Late-Breaking/Demo (LBD) Session of the 24th International Society for Music Information Retrieval Conference. (Link to preprint & code)

- "Charts" are directions for game players to perform certain actions in sync with the music
- Reformulated task as autoregressive "chart token" generation. Proposed approach outperforms past approaches in rhythmical correctness, measured in micro-F1

Maeng, J., **Yi, J.**, Park, J., Chun, B. (2022). **"Analysis of Auxiliary Resource Aware Allocation of Deep Learning Jobs."** In Korea Computer Congress 2022. (Link to preprint)

- Wrote CPU/GPU benchmarks for various CV/NLP/Recommendation models

Skills

Languages: Python (very fluent), Modern C++ (moderate) / C, MATLAB, Julia, Javascript (coursework-level)
Music Composition: MIDI-based composition. Songs sold to labels and games

Service

Reviewer: NeurIPS 2025 Workshop AI4Music

Honors

Amazon AI PhD Fellowship **2025 – Current**

- Awarded to 20 first-year PhD students selected by school leadership in consultation with faculty
- Provides tuition waiver and stipends totaling 30,000 USD, plus an equipment/travel budget of 2,500 USD

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

- Full Tuition Scholarship awarded to ∼150 STEM students nationwide, on behalf of the president of ROK
- Additional one-time stipend of 2.5M KRW (∼ 2,000 USD)

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

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

References

Minje Kim
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