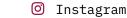
Dayun Choi

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https://choishio.github.io/
in LinkedIn





Education

Mar, 2022 - Present

■ Master's and PhD Integrated Course Student in School of Electrical Engineering at Korea Advanced Institute of Science and Technology (KAIST) Advisor: Prof. Jung-Woo Choi

Research Assistant at Smart Sound Systems Lab

Focus: Deep Learning-based Target Sound Extraction on Multichannel Mixture

using Spatial Queries

GPA: 3.88/4.3 (95.8/100) – via 81 credits.

Mar, 2018 - Feb, 2022

B.S. in Electronic Engineering at Sogang University

Advisor: Prof. Yangmo Yoo

Undergraduate Intern at Medical Imaging Computing Systems Lab

Focus: Deep Learning-based Video Classification on Lung Ultrasound Imaging

GPA: 4.12/4.3 (98.6/100) – via 134 credits. (Summa Cum Laude)

Publications

Journal Articles

- **D. Choi** and J.-W. Choi, "SoundCompass: Navigating target sound extraction with effective directional clue integration in complex acoustic scenes," *arXiv preprint arXiv:2509.18561*, 2025. **9** URL: https://arxiv.org/abs/2509.18561, **9** Demo: https://choishio.github.io/demo-SoundCompass/.
- **D. Choi** and J.-W. Choi, "Target sound extraction on reverberant mixture," *The Journal of the Acoustical Society of America (JASA)*, vol. 154, no. 4_supplement, A270–A271, 2023. ODOI: https://doi.org/10.1121/10.0023494.

Conference Proceedings

- **D. Choi** and J.-W. Choi, "Multichannel-to-multichannel target sound extraction using direction and timestamp clues," in *Proc. International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, IEEE, Hyderabad, India, 2025, pp. 1–5. ODOI: https://doi.org/10.1109/ICASSP49660.2025.10890145, ODemo: https://choishio.github.io/demo_M2M-TSE/.
- **D. Choi** and J.-W. Choi, "Target sound extraction on multichannel reverberant mixture," in 2024 Autumn Conference of the Acoustical Society of Korea (ASK), ASK, Busan, Korea, 2024, pp. 170–171.
- **D. Choi** and J.-W. Choi, "Target sound extraction on reverberant mixture using sound-class label and timestamp information," in 2024 Spring Conference of the Acoustical Society of Korea (ASK), ASK, Jeju, Korea, 2024, pp. 335–336.
- **D. Choi**, D. Lee, and J.-W. Choi, "Low complexity dnn model for multichannel speech enhancement," in 2023 Spring Conference of the Korean Society of Noise and Vibration Engineering (KSNVE), KSNVE, Samcheok, Korea, 2023, pp. 132–132.
- D. Lee, **D. Choi**, and J.-W. Choi, "DeFT-AN RT: Real-time multichannel speech enhancement using dense frequency-time attentive network and non-overlapping synthesis window," in *Proc. Interspeech*, ISCA, Dublin, Ireland, 2023, pp. 864–868. ODI: https://doi.org/10.21437/Interspeech.2023-2437.

Research Projects

Jul, 2024 – Present

- IoT-based Eavesdropping Attack Detection and Defense Technology funded by National Research Foundation of Korea (NRF) with National University of Singapore (NUS)
 - Developed DNN models for speech dialogue restoration and enhancement from adjacent indoor spaces
 - Generated simulated and real-world datasets using Pyroomacoustics library, speakers, and multiple IoT sensors to evaluate system viability in real-world environments
 - Developed software program user interface and hardware products
 - Tools: Python (PyTorch), Matlab, NI SignalExpress, LabVIEW | KRK ROKIT 5 (RP5 G3), RME Audio FIREFACE UC, NI 9234, Sensors (352C66, 355B04, HY929)

May, 2024 – Present

- General-Purpose AI for Integrated Analysis and Generation of Spatial Audio funded by National Research Foundation of Korea (NRF)
 - Developed Universal Spatial Audio Analysis Network to infer source directions, positions, classes, and room acoustics, and separate signals into object-oriented formats
 - Developed Universal Spatial Audio Generation Network to synthesize realistic 3D audio from single-channel or separated sources, supporting multimodal input and 6-DoF spatial rendering
 - Tools: Python (PyTorch)

Jan, 2023 – Present

- Noise Cancellation and Speech Recognition Technology Robust to Battlefield Environments funded by Center for Applied Research in Artificial Intelligence (CARAI)
 - Developed DNN models for robust noise cancellation in battlefield scenarios
 - Tools: Python (PyTorch)

Sep, 2021 – Dec, 2021

- Real-time COVID-19 Detection System from Lung Ultrasound Videos in Medical Imaging Computing Systems Lab
 - Developed DNN models for video classification of lung ultrasound data
 - Explored model compression techniques for real-time deployment
 - Developed system user interface
 - Tools: Python (TensorFlow, PyQt)

Jul, 2021

- AI-based Automobile Recognition System in The 2nd Software Pre-Education Program for Hyundai Mobis - Sogang University (FoSS)
 - Pre-trained DNN models for object detection using Open-Images dataset
 - Deployed model on Jetson Nano and validated automobile detection performance
 - Tools: Python (PyTorch), Jetson Nano

Assistantships

Korea Advanced Institute of Science and Technology (KAIST)

Summer, 2025

[EE495] Individual Study (Lecturer: Prof. Jung-Woo Choi)

Spring, 2025 – Present

Lab Head of Smart Sound Systems Lab

Winter, 2024

[EE495] Individual Study (Lecturer: Prof. Jung-Woo Choi)

Autumn, 2024

[EE202] Signals and Systems (Lecturer: Prof. Jung-Woo Choi) (Head TA)

Assistantships (continued)

Spring, 2024	[EE488] Introduction to Audio Signal Processing (Lecturer: Prof. Jung-Woo Choi)
	(Head TA) & [EE495] Individual Study (Lecturer: Prof. Jung-Woo Choi)

Miscellaneous Experiences

Honors & Awards

Mar 2 nd , 2024	■ The 1st place at the Technical Committee on Architectural Acoustics student
	paper award for the December Sydney meeting

Experiences

Skills

Programming Languages Python/Matlab (Advanced), C/Linux/VHDL (Intermediate)

ML Frameworks PyTorch/TensorFlow (Advanced)

Software OrCAD/Pspice (Advanced), NI SignalExpress/Audacity (Intermediate), nanoHUB/Unity/LabVIEW (Elementary)

Hardware KRK ROKIT 5 (RP5 G3)/RME Audio FIREFACE UC/NI 9234 (Intermediate), Arduino/EasyFPGA-Combo2/Jetson Nano (Elementary)

Languages Korean (Native), English (TOEIC: 735 – expired)