

Kyudan Jung

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EDUCATION

Korea Advanced Institute of Science and Technology (KAIST)

Integrated M.S. & Ph.D. Program in Artificial Intelligence, DAVIAN Lab

- Advisor: Prof. Jaegul Choo

Daejeon, Republic of Korea

Sep. 2025 – 2029 (anticipated)

Chung-Ang University

B.S. in Mathematics and Next-Generation Semiconductor Engineering

- Graduated early in seven semesters, *Magna Cum Laude*; GPA: 4.10/4.50

Seoul, Republic of Korea

Mar. 2022 – Aug. 2025

INDUSTRY RESEARCH EXPERIENCE

Speech AI Research Intern

Qualcomm AI Research

- Developing full-duplex speech language models.
- Researching reinforcement-learning post-training for full-duplex spoken interaction.
- Engineering a tool-calling voice agent running on Qualcomm mobile NPUs.

Apr. 2026 – Present

Seoul, Republic of Korea

Foundation Research Resident

NAVER Cloud, World Best Language Model Project

- Evaluated omni-modal models and built data pipelines for audio language models and full-duplex speech models.
- Researched continuous audio encoders and contributed to HyperCLOVA X 8B Omni and HyperCLOVA X 32B Think.

Oct. 2025 – Apr. 2026

Seongnam, Republic of Korea

Deep Learning Research Engineer Intern

KRAFTON, AI Research Center, AI Audio Generation Team

- Built dataset collection and preprocessing pipelines for text-to-speech and speech/audio language model development.
- Worked on speech diarization, emotion recognition, and automatic speech recognition; advised by Taehong Moon.

Jun. 2025 – Aug. 2025

Seoul, Republic of Korea

ACADEMIC RESEARCH EXPERIENCE

Undergraduate Research Intern

KAIST AI, DAVIAN Lab

- Conducted research on multimodal and language models under Prof. Jaegul Choo, including developing an LLM agent for PowerPoint slide editing.

Jan. 2025 – Aug. 2025

Daejeon, Republic of Korea

Undergraduate Research Intern

Seoul National University, Speech AI Team

- Studied elementary speech AI with Prof. Nam-Joon Kim and Hyungon Ryu from NVIDIA.
- Developed a system that converts mathematical speech into LaTeX and transforms LaTeX expressions into spoken language using TTS, improving accessibility for people with disabilities.

Mar. 2023 – Nov. 2024

Seoul, Republic of Korea

DRAM Circuit Design Research Study | Chung-Ang University, Prof. Donghyeon Han

Nov. 2024 – Dec. 2024

NLP Research Study (CS224n) | Chung-Ang University, Prof. Hwan-hee Lee

Jun. 2024 – Aug. 2024

Measure Theory Research Study | Chung-Ang University, Prof. Young-hoon Hong

Jun. 2024 – Aug. 2024

SELECTED PUBLICATIONS

*Equal contribution. Author names are listed in publication order.

1. OmniACBench: A Benchmark for Evaluating Context-Grounded Acoustic Control in Omni-Modal Models

Seunghye Kim, Bumkyu Park, **Kyudan Jung**, Joosung Lee, Soyeon Kim, Jeonghoon Kim, Taeuk Kim, Hwiyeol Jo
EMNLP 2026 Main.

2. SOMMELIER: Scalable Open Multi-turn Audio Pre-processing for Full-duplex Speech Language Models

Kyudan Jung, Jihwan Kim, Soyeon Kim, Jeonghoon Kim, Jaegul Choo, Cheonbok Park
ACL 2026 Industry Track.

3. **Talk to Your Slides: High-Efficiency Slide Editing via Language-Driven Structured Data Manipulation**
Kyudan Jung, Hojun Cho, Jooyeol Yun, Soyoung Yang, Jaehyeok Jang, Jaegul Choo
ACL 2026 Findings.
4. **SLICE: Speech Enhancement via Layer-wise Injection of Conditioning Embeddings**
Seokhoon Moon, **Kyudan Jung**, Jaegul Choo
INTERSPEECH 2026.
5. **Delving into Large Language Models for Effective Time-Series Anomaly Detection**
Junwoo Park, **Kyudan Jung**, Dohyun Lee, Hyuck Lee, Daehoon Gwak, ChaeHun Park, Jaegul Choo, Jaewoong Cho
NeurIPS 2025.
6. **TeXBLEU: Automatic Metric for Evaluating LaTeX Format**
Kyudan Jung, Nam-Joon Kim, Hyongon Ryu, Sieun Hyeon, Seung-jun Lee, Hyuk-jae Lee
ICASSP 2025, oral presentation.
7. **MathReader: Text-to-Speech for Mathematical Documents**
Sieun Hyeon, **Kyudan Jung**, Nam-Joon Kim, Hyun Gon Ryu
ICASSP 2025, oral presentation.
8. **MathSpeech: Leveraging Small LMs for Accurate Conversion in Mathematical Speech-to-Formula**
Sieun Hyeon*, **Kyudan Jung***, Jaehye Won, Nam-Joon Kim, Hyun Gon Ryu, Hyuk-jae Lee, Jaeyoung Do
AAAI 2025.
9. **Enhancing ASR Performance through OCR Word Frequency Analysis: Theoretical Foundations**
Kyudan Jung, Nam-Joon Kim, Hyun Gon Ryu, Hyuk-jae Lee
IEEE ICCE 2025, oral presentation.
10. **Fast Fourier Transform-Based Spectral and Temporal Gradient Filtering for Differential Privacy**
Hyeju Shin*, **Kyudan Jung***, Seongwon Yun*, Juyoung Yun*
CIKM 2025 Workshop on Human-Centric AI.

PREPRINTS AND ADDITIONAL PUBLICATIONS

1. **HiPLEX: Hierarchical Reinforcement Learning for Full Duplex Speech Language Models**
Kyudan Jung, Hyunsin Park, Jinhwan Park, Yoonhyung Lee, Jinhyeok Yang, KiHyun Nam, Jinkyu Lee
Under review, ICLR 2027.
2. **Hiding Tool Latency in On-Device Environments with Speech-Conditioned Speculative Execution**
Kyudan Jung, Hyunsin Park, Jinhwan Park, Yoonhyung Lee, Jinhyeok Yang, KiHyun Nam, Jinkyu Lee
Under review, ICASSP 2027.
3. **What Survives Temporal Compression? Frequency-Aware Training of Low-Rate Audio Encoders**
Kyudan Jung, Sehyun Lee, Song-ha Jo, Jaegul Choo, Sanghyuk Choi
Under review, ICASSP 2027.
4. **SNAP: Speaker Nulling for Artifact Projection in Speech Deepfake Detection**
Kyudan Jung*, Jihwan Kim*, Minwoo Lee*, Soyeon Kim, Jeonghoon Kim, Jaegul Choo, Cheonbok Park
arXiv preprint, 2026.
5. **MathBridge: A Large Corpus Dataset for Translating Spoken Mathematical Expressions into LaTeX Formulas**
Kyudan Jung, Sieun Hyeon, Jeong Youn Kwon, Nam-Joon Kim, Hyun Gon Ryu, Hyuk-jae Lee, Jaeyoung Do
arXiv preprint, 2024.
6. **Enhancing ASR Performance through Relative Word Frequency in OCR and Normal Word Frequency Analysis**
Kyudan Jung, Seungmin Bae, Nam-Joon Kim, Jaepil Lim, Hyun Gon Ryu, Hyuk-jae Lee
IEEE AICAS 2024, oral presentation.
7. **Improving ASR Performance with OCR Through Word Frequency Difference**
Kyudan Jung, Seungmin Bae, Nam-Joon Kim, Hyun Gon Ryu, Hyuk-jae Lee
ICEIC 2024, oral presentation.
8. **Enhanced Electrical Performance in SiC Double-Trench MOSFETs through Optimization Techniques**
Jae-Duck Yoon, **Kyudan Jung**, Min-Ji Kim, Joon-Seok Song, Nam-Joon Kim
ICCE-Asia 2024.
9. **Analysis of Transformer Decoder Architecture and KV Cache Behavior During LLM Inference**
Kyudan Jung et al.
ICEIC 2025.

10. **Intuitive Robot Arm Control System Based on HMD Hand Tracking**
Seung Jun Lee, Hyeong Jin Do, Tae Hyeong Kim, **Kyudan Jung**, Hyun Gon Ryu, Nam-Joon Kim
ICEIC 2025, oral presentation.

11. **Data Augmentation and Weighted Ensemble Techniques for Semiconductor Wafer Bin Map Defect Classification**
Young-Dae Mun, **Kyudan Jung** et al.
IEIE Fall Conference 2024.

12. **Matrix Decomposition and Transformation for AI Semiconductors**
Kyudan Jung, Nam-Joon Kim, Hyun Gon Ryu, Hyuk-jae Lee
IEIE Summer Conference 2024.

13. **Enhancing ASR and TTS Models with LLMs for Accessible Mathematical Learning**
Kyudan Jung, Sieun Hyeon, Nam-Joon Kim, Hyongon Ryu, Hyuk-jae Lee
NVIDIA GTC 2025 Poster Session.

14. **HyperCLOVA X 8B Omni and HyperCLOVA X 32B Think**
NAVER Cloud HyperCLOVA X Team
Technical reports, 2026.

AWARDS AND SCHOLARSHIPS

Grand Prize (2nd overall), 1st AI Frontier Challenge Korean AI Society, Speech Enhancement	2025
Excellence Scholarship for Master’s Students KRW-equivalent award of approximately \$6,800	2025
POLARIS SIF Research Encouragement Award RAG-based GPT-4o-mini specialized agent	2025
Chairman’s Award, National Research Foundation of Korea Outstanding Supporter	2024
Kwanjeong Educational Foundation Scholarship Undergraduate scholarship, approximately \$16,300	2024
POLARIS SIF Essay Grand Prize First place	2024
Minister of Education Award We-Meet semiconductor fab site-evaluation project, first-place team	2023
POLARIS SIF Essay Grand Prize First place	2023
My AI-Based Digital Learning Know-How Competition Encouragement Award	2023

ACADEMIC SERVICE

Conference Reviewer AAAI Main Track	2027
Workshop Reviewer IEEE Spoken Language Technology Workshop (SLT)	2026
Conference Reviewer INTERSPEECH	2026
Conference Reviewer AAAI Alignment Track	2026
Conference Reviewer AAAI Main Track	2026

LEADERSHIP AND ACTIVITIES

Supporters Leader, Department of Next-Generation Semiconductor <i>Chung-Ang University</i>	Apr. 2023 – Mar. 2025 <i>Seoul, Republic of Korea</i>
Founder and Team Leader, CAU-SAIAC Artificial Intelligence Club <i>Chung-Ang University</i>	Mar. 2024 – Dec. 2024 <i>Seoul, Republic of Korea</i>
• Led the “Principles of Deep Learning in Detail” study team and published educational content.	
Participant, LG Aimers 5th Cohort <i>LG AI Research</i>	Jul. 2024 – Sep. 2024 <i>Republic of Korea</i>

TECHNICAL SKILLS

Research: Speech and audio language models, multimodal LLMs, ASR, TTS, speech enhancement, data engineering
Programming: Python, PyTorch, C, C++, CUDA, Verilog, R, SQL, LaTeX
Hardware and EDA: Cadence Virtuoso, Vivado, FPGA development

SELECTED CERTIFICATIONS

Semiconductor: Next-Generation Semiconductor Micro-degrees in Circuit/System (Intermediate), General (Advanced and Elementary), and System/SW (Intermediate)
AI and Computing: NVIDIA Fundamentals of Accelerated Computing with CUDA C/C++; NVIDIA Applications of AI for Anomaly Detection; NVIDIA Transformer-Based NLP Applications; NVIDIA Computer Vision for Industrial Inspection; LG Aimers/Data Intelligence
Professional: SQL Developer (SQLD), Linux Master Level 2, Craftsman Information Processing, Craftsman Radio Electronic Communication
Language: Korean (Native), English (Advanced), Chinese (Elementary)