

Jinkyong Hwangbo

+82-10-7576-2498 | hbjk0305@snu.ac.kr | hbjk0305.github.io

EDUCATION

- **Seoul National University** Mar 2018–Aug 2022
Bachelor of Science in Industrial Engineering and Artificial Intelligence Seoul, Republic of Korea
 - Summa Cum Laude, GPA: 4.06/4.30, Rank: **3rd**

WORK EXPERIENCE


- **Samsung Research, Samsung Electronics** Jul 2022–Present
Full Time Researcher (Supervisors: Chanwoo Kim, Corporate EVP; Hoon-Young Cho, Corporate VP) Seoul, Republic of Korea
 - Language & Voice Team, AI Center-Seoul
 - Focus: Audio-Visual Separation, On-device Sound Event Detection, Anomaly Detection
- **Samsung Research, Samsung Electronics** Summer 2021
Research Intern (Supervisor: Chanwoo Kim, Corporate EVP) Seoul, Republic of Korea
 - Language & Voice Team, Global AI Center
 - Focus: Neural Bandwidth Extension
- **Seoul National University** Summer 2020
Research Intern (Advisor: Prof. Bongwon Suh) Seoul, Republic of Korea
 - Human Centered Computing Lab, Graduate School of Convergence Science and Technology
 - Focus: ECG-based Heart Disease Prediction

PATENTS AND PUBLICATIONS

P=PATENT, S=IN PREPARATION

- [S.1] Jinkyong Hwangbo, et al. (2026). A Unified Framework for Audio-Visual Localization and Separation. In preparation for *Interspeech 2026*.
- [P.2] Jinkyong Hwangbo, Hosang Sung, Seong-Hu Kim, et al. "Electronic Device and Method for Summarizing Video Data". KR Patent Application, P2025-0128738. Filed: Sep 10, 2025.
- [P.1] JeongHoon Lee, Yeaseul Song, Jinkyong Hwangbo, et al. "Electronic Device and Method for Generating Summarized Video Data". KR Patent Application, P2025-0115037. Filed: Aug 19, 2025.

PROJECTS

- **Audio Eraser for Galaxy S25 series** Mar 2024–Present
Main AI-powered feature of Galaxy S25 series that can remove unwanted background sounds Samsung Electronics 
 - Designed lightweight, low-latency neural networks for multi-label sound event detection and optimized C++ engine for edge devices. Our model beats pretrained audio tagging model by 2% (F1 score) with 22× fewer parameters.
 - Developed a multimodal approach to identify and extract video highlights through audio-visual integration. **[P.1, P.2]**
 - Currently working on audio-visual localization and separation, using visual cues to separate sound sources. **[S.1]**
- **Anomaly Detection for Samsung Home Appliances** Oct 2022–Dec 2024
Acoustic anomaly detection for home appliances, deployed in SmartThings home appliances Samsung Electronics
 - Developed data-efficient fault detection algorithm using <4 hours of training data, improving F1 score from 47.6% to 96.3% in real-world deployment and delivering \$1.3M in estimated annual cost reduction.
- **Comparison of Recognizing Emotions Depending on Bandwidth-limitation of Digital Speech** Spring 2022
Bachelor's Thesis in Industrial Engineering (Advisor: Prof. Woojin Park) Seoul National University
 - Conducted human-subject experiments with bandwidth-controlled speech to quantify effects on emotion recognition accuracy, demonstrating that emotional category has greater impact than bandwidth limitation on recognition performance.
- **Speech Bandwidth Extension with Hifi-GAN** Summer 2021
Bachelor's Thesis in Artificial Intelligence (Advisors: Chanwoo Kim, Corporate EVP; Prof. Sungjoo Yoo) Samsung Electronics

- Developed generative model extending audio bandwidth from 8 kHz to 16 kHz while restoring codec artifacts, improving MUSHRA perceptual quality scores from 66.3 to 87.1 and demonstrating generalization across unseen speakers and diverse codec conditions.
- GAN based Sign Language Synthesis Model May–Dec 2021
Undergraduate Research Program (Advisor: Prof. Kyomin Jung) Seoul National University
 - Led team of 3 researchers, developing GAN model that generates sign language motion video while preserving speaker facial features, securing undergraduate research grant.
- ECG-based Heart Disease Prediction Using Deep Learning Summer 2020
Research Internship Project at HCC Lab (Advisor: Prof. Bongwon Suh) Seoul National University
 - Developed Convolutional Recurrent Neural Network (CRNN) model for mobile heart disease prediction.

HONORS AND AWARDS

- **Samsung Research Award** (\$ 2,200 USD) Dec 2024
Awarded project biannually for exceptional technical achievement across global research centers.
- **Merit-based Scholarship (Top 5%) @ Seoul National University** 2019–2022
full amount (3 semesters), 50% (3 semesters), and 10% (1 semester) of tuition waiver
- Reporter Award @ Seoul National University Nov 2019
- 4th Supercomputer Idea Contest (1st place, \$ 500 USD) Oct 2016
- 3rd Supercomputer Idea Contest (1st place, \$ 700 USD) Oct 2015

TEACHING / MENTORING EXPERIENCE

- Teaching Assistant Mar 2021–Jun 2022
Courses: Human Factors Engineering (406.304), Scientific Management (406.211)
 - Assisted students in achieving completion of homework, projects and evaluated their work
- Volunteer Social Service
 - SNU Mentoring Program: Served online mentoring for high school students. Mar–Nov 2021
 - Teaching assistant for young adults with developmental disabilities. Spring 2019

ACTIVITIES

- Tobigs: Machine Learning Study Group Jan 2021–Jan 2022
 - Smootify [🔗]: Developed system for seamless song transitions, enabling continuous infinite streaming using music generation techniques with MuseGAN.
 - MPTI [🔗]: Developed chat service that allows users to interact with movie characters using DialoGPT and GPT-2.
- Seoul National University News [🔗] Apr 2018–Dec 2019
 - Head of Photography Department (1 semester) – Led department and managed visual content.
 - Head of New Media Team (1 semester) – Led newly established New Media team
 - Photojournalist (2 semesters) – Worked as photographer for university newspaper.

SKILLS

- **Tools and Frameworks:** PyTorch, TensorFlow, Tensorflow Lite, NumPy, Pandas, Matplotlib, SciPy, scikit-learn
- **Programming Languages:** Python, C/C++, Java, Kotlin, MySQL
- **Relevant Courseworks:** *Graduate level:* Machine Listening, Convex Optimization, Social Computing;
Undergraduate level: Artificial Intelligence (ENG), Basics of Deep Learning, Computational Linguistics
- **Others:** Git, Github, Unit Testing, OOP, CI/CD