

EUNJIN CHOI

Curriculum Vitae (Last update: September 19, 2025)

Ph.D. Candidate @ Music and Audio Computing Lab, KAIST

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RESEARCH INTERESTS

Music Generation, Music Representation, Music Information Retrieval

My research focuses on **enabling machines to learn and understand the compositional rules** of human-created music. I develop models that capture musical structure and support controllable generation guided by human intention. Ultimately, I aim to empower musicking through technologies that foster human creativity and expression.

SELECTED PUBLICATIONS

D3PIA: A Discrete Denoising Diffusion Model for Piano Accompaniment Generation from Lead Sheet

Eunjin Choi, Hounsung Kim, Hayeon Bang, Taegyun Kwon, Juhan Nam

2026 IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP-Submitted), 2026

- Developing a piano accompaniment model that strictly follows (80%) chord progression with fewer dissonances

On the De-duplication of the Lakh MIDI Dataset

Eunjin Choi, Hyerin Kim, Jiwoo Ryu, Juhan Nam, Dasaem Jeong

Proceedings of the 25th International Society for Music Information Retrieval Conference (ISMIR), 2025

- Leading large-scale dataset de-duplication using embedding-based approaches: eliminated 21% redundant data.

PianoBind: A Multi-modal Joint Embedding Model for Pop-piano Music

Hayeon Bang, **Eunjin Choi**, Seungheon Doh, Juhan Nam

Proceedings of the 26th International Society for Music Information Retrieval Conference (ISMIR), 2025

- Implementing time-aligned segmentation of audio-MIDI during tri-modal training and MIDI encoder part of text-audio-MIDI tri-modal joint training

Teaching Choral Generation Model to Avoid Parallel Motions

Eunjin Choi, Hyerin Kim, Juhan Nam, Dasaem Jeong

Proceedings of the 16th International Symposium on Computer Music Multidisciplinary Research (CMMR), 2023

- Implementing loss penalizing parallel 5ths and 8ths of choral generation model and model decoding

YM2413-MDB: A Multi-Instrumental FM Video Game Music Dataset with Emotion Annotations

Eunjin Choi, Yoonjin Chung, Seolhee Lee, Jong Ik Jeon, Taegyun Kwon, Juhan Nam

Proceedings of the 23rd International Society for Music Information Retrieval Conference (ISMIR), 2022

- Collecting the MIDI dataset by disassembling the binary YM2413 sound chip commands, defining taxonomies and showing baseline results of emotion-conditioned generation with GPT-2

More Publication @ <https://scholar.google.com/citations?user=3VWIf88AAAAJ>

EDUCATION

Ph.D. Student in Culture Technology

Mar. 2022 – Present

Korea Advanced Institute of Science and Technology (KAIST), Daejeon, Korea

Advisor: Juhan Nam

M.S. in Culture Technology

Mar. 2020 – Feb. 2022

Korea Advanced Institute of Science and Technology (KAIST), Daejeon, Korea

Thesis: YM2413-MDB: A Collection of Multi-instrumental Symbolic Music and 1980s FM Music Generation for Video Game

Advisor: Juhan Nam

B.E. in Convergence

Mar. 2015 – Feb. 2020

Daegu Gyeongbuk Institute of Science and Technology (DGIST), Daegu, Korea

Graduated magna cum laude

SELECTED RESEARCH PROJECTS

Pop Piano Score Conversion

2025 - 2026

Industry Project with MPAG, South Korea

- Aligning two symbolic scores where the structures are different, implementing a score conversion model

Style-prompted Piano Cover Generation from Pop Music

2022 - 2024

Industry Project with NC Soft, South Korea

- Implementing a program that converts pop audio to lead sheet using pre-trained models, and generation models

Research Talent Training Program for Emerging Technologies in Games

2020 - 2022

Culture Technology R&D Program, Ministry of Culture, Sports and Tourism and Korea Creative Content Agency

- Game music generation (ISMIR 2022) and game development. For game development, developing games (PC, VR) and implementing real-time audio processing and pitch estimation for voice input

EXPERIENCES

MPAG, South Korea

Jun. 2025 – Aug. 2025

Part-time AI researcher, Piano score difficulty prediction

Neutune, South Korea

Jun. 2021 – Sep. 2021

Research intern, Multi-instrumental symbolic music generation

INFINYX, South Korea

Jul. 2019 – Aug. 2019

Research intern, Medical image segmentation (gallbladder)

Visual Computing Lab, DGIST, South Korea

Jan. 2019 – Feb. 2019

Research intern, Super-resolution and denoising images

Music and Audio Research Group, Seoul National University, South Korea

Jul. 2018 – Nov. 2018

Research intern, EEG experiment of musical syntax perception

UC Berkeley, United States

Jun. 2016 – Aug. 2016

Summer Session, Coursework: Introduction to Music Theory (Grade A)

AWARDS AND HONORS

Recipient, Producer DK AI Composition Challenge (\$150 prize)

2025

3rd Place, KAIST Anthem Challenge (\$200 prize)

2025

NC Scholarship, NCSoft (\$7,000 prize)

2022

SERVICES

Organizing committee, local organization chair, ISMIR

2025

Reviewer, ICASSP, IEEE TASLP

LANGUAGES, SKILLS, AND INTERESTS

English (fluent), Korean (native)

Python(PyTorch), C, C++, C#, Matlab, HTML/CSS, JavaScript, Unity, VR (Oculus Quest 2)

Piano, violin, acoustic guitar, music composition