Curriculum Vitae (Last update: Sep 1, 2025)

Juhan Nam

Korea Advanced Institute of Science and Technology (KAIST)
Graduate School of Culture Technology
291 Daehak-ro, Yuseong-gu, Daejeon, 34141, South Korea
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RESEARCH INTERESTS

Music AI, Music information retrieval, audio and music signal processing, machine learning, deep learning, computational modelings of performances, interactive music systems, sound synthesis, digital audio effects, human-computer interaction, audio-visual art, soundscape, acoustics, music perception and cognition

ACADEMIC APPOINTMENTS

Professor *Sep 2025 - Present*
Graduate School of Culture Technology, KAIST

Associate Professor *Sep 2019 - Aug 2025*
Graduate School of Culture Technology, KAIST

Affiliated Professor *Nov 2019 - Present*
Kim Jaechul Graduate School of Artificial Intelligence, KAIST

Head of Research Center *May 2022 - Present*
Sumi Jo Performing Arts Research Center, KAIST

Assistant Professor *Sep 2014 - Aug 2019*
Graduate School of Culture Technology, KAIST

INDUSTRY EMPLOYMENT AND AFFILIATION

AudAI, Seoul, South Korea *Apr 2023 - Present*
Co-founder

Neutune, Seoul, South Korea *Apr 2020 - Present*
Co-founder

Qualcomm Technologies Inc, San Diego, CA, USA *Oct 2012 - Sep 2014*
Staff Research Engineer, QCT Advanced Tech R&D

Adobe Systems, San Francisco, CA, USA *Jun 2011 - Sep 2011*
Research Intern, Advanced Technology Labs

Young Chang (Kurzweil Music Systems), Incheon, South Korea *Apr 2001 - Jul 2006*
Senior Software Engineer, R&D Department

Cubic-I, Seoul, South Korea *Mar 2000 - Mar 2001*
Software Engineer (alternative to military service)

Nacssnet, Seoul, South Korea *Feb 1998 - Feb 2000*
Network Administrator (alternative to military service)

EDUCATION

Stanford University, CA, USA *Sep 2006 - Jan 2013*
Center for Computer Research in Music and Acoustics (CCRMA)
Ph.D. in Music (Computer-Based Music Theory and Acoustics)
M.S. in Electrical Engineering (en-route)

Seoul National University, Seoul, South Korea *Mar 1994 - Feb 1998*
B.S. in Electrical Engineering

TEACHING AND ADVISING

Regular KAIST Courses

· GCT634/AI613: Musical Applications of Machine Learning
· CTP431: Fundamentals of Computer Music

Lab Students

· Current Students: 15 PhDs and 8 MSs
· Former Students: 12 PhDs and 35 MSs (who earned the degrees)

SELECTED ACADEMIC SERVICES

General Chair *2025*
International Society for Music Information Retrieval (ISMIR) Conference, Daejeon, South Korea

General Chair *2023*
International Symposium on AI and Music Performance, Daejeon, South Korea

Co-Founder and President *2024 - Present*
Korean Society for Music Informatics (한국음악정보학회)

President *2021 - 2023*
Korean Society for Music Perception and Cognition (한국음악지각인지학회)

Co-Organizers *2022*
Dagstuhl Seminar (Germany)

Program Chair *2021*
International Society for Music Information Retrieval (ISMIR) Conference

Academic Director *2019*
International Symposium on Electronic Art (ISEA) Conference

IEEE AASP Technical Committee Member *2023 - Present*
IEEE Signal Processing Society Audio and Acoustic Signal Processing Technical Committee

Section Editor *2024 - Present*
Transactions of the International Society for Music Information Retrieval

Associate Editor *2023 - Present*
IEEE/ACM Transactions on Audio, Speech and Language Processing

Associate Technical Editor *2021 - 2025*
Journal of the Audio Engineering Society

SELECTED AWARDS AND HONORS

Best Paper Awards *2024*
Digital Audio Effects Conference (DAFx)

Best Student Paper Awards *2023*
IEEE Workshop on Applications of Signal Processing to Audio and Acoustics (WASPAA)

Winner in the Category of Transformative and Transgressive Play *2022*
ACM CHI Conference on Human Factors in Computing Systems, Student Game Competition

International Joint Research Awards *2021*
Special Awards in Commemoration of the 50th Anniversary of KAIST

Impact Research Awards *2019, 2020, 2021, 2022, 2023, 2024*
College of Liberal Arts and Convergence Science, KAIST

Outstanding Faculty Awards (Excellence Prize in Research Innovation) *2019*
College of Liberal Arts and Convergence Science, KAIST

Samsung Research Funds *2017*
Samsung Research Funding & Incubation Center for Future Technology

SELECTED PUBLICATIONS

Google Scholar: https://scholar.google.com/citations?user=eG2NHUYAAAAJ&hl=en

Journals (SCI/SCIE)

- Junwon Lee, Jaekwon Im, Dabin Kim, and Juhan Nam, "Video-Foley: Two-Stage Video-To-Sound Generation via Temporal Event Condition For Foley Sound", *IEEE/ACM Transactions on Audio, Speech and Language Processing, 2025*
- SeungHeon Doh, Jongpil Lee, Dasaem Jeong, and Juhan Nam, "Musical Word Embedding for Music Tagging and Retrieval", *IEEE/ACM Transactions on Audio, Speech and Language Processing, 2025*
- Taegyun Kwon, Dasaem Jeong, and Juhan Nam, "Towards Efficient and Real-Time Piano Transcription Using Neural Autoregressive Models", *IEEE/ACM Transactions on Audio, Speech and Language Processing, 2024*
- Sarah Kim, Jeong Mi Park, Seungyeon Rhyu, Juhan Nam, and Kyogu Lee, "Quantitative Analysis of Piano Performance Proficiency Focusing on Difference Between Hands", *PLOS ONE, 2021*
- Keunhyoung Luke Kim, Jongpil Lee, Sangeun Kum, Chae Lin Park, and Juhan Nam, "Semantic Tagging of Singing Voices in Popular Music Recordings", *IEEE/ACM Transactions on Audio, Speech and Language Processing*, 2020
- Dasaem Jeong, Taegyun Kwon, and Juhan Nam, "Note Intensity Estimation of Piano Recordings Using Coarsely-aligned MIDI Score", *Journal of the Audio Engineering (JAES)* Society, 2020
- Sangeun Kum and Juhan Nam, "Joint Detection and Classification of Singing Voice Melody Using Convolutional Recurrent Neural Networks," *Applied Sciences*, 2019
- Taejun Kim, Jongpil Lee, and Juhan Nam, "Comparison and Analysis of SampleCNN Architectures for Audio Classification," *IEEE Journal of Selected Topics in Signal Processing*, 2019
- Juhan Nam, Keunwoo Choi, Jongpil Lee, Szu-Yu Chou, and Yi-Hsuan Yang, "Deep Learning for Audio-based Music Classification and Tagging," *IEEE Signal Processing Magazine*, 2018
- Jongpil Lee, Jiyoung Park, Keunhyoung Luke Kim and Juhan Nam, "SampleCNN: End-to-End Deep Convolutional Neural Networks Using Very Small Filters for Music Classification," *Applied Sciences*, 2018
- Jongpil Lee and Juhan Nam, "Multi-Level and Multi-Scale Feature Aggregation Using Pre-trained Convolutional Neural Networks for Music Auto-tagging," *IEEE Signal Processing Letters*, 2017
- Yoonchang Han, Subin Lee, Juhan Nam and Kyogu Lee, "Sparse feature learning for instrument identification: effects of sampling and pooling methods," *Journal of the Acoustical Society of America (JASA)*, 2016
- Jussi Pekonen, Juhan Nam, Vesa Välimäki and Julius O. Smith, "Optimized Polynomial Spline Basis Function Design for Quasi-Bandlimited Classical Waveform Synthesis," *IEEE Signal Processing Letters*, 2012
- Vesa Välimäki, Jussi Pekonen, Juhan Nam, "Perceptually Informed Synthesis of Bandlimited Classical Waveforms Using Integrated Polynomial Interpolation," *The Journal of the Acoustical Society of American (JASA)*, 2012
- Juhan Nam, Vesa Välimäki, Jonathan S. Abel, Julius O. Smith, "Efficient Anti-aliasing Oscillators Algorithms Using Low-order Fractional Delay Filters," *IEEE Transaction on Audio, Speech and Language Processing*, 2010
- Vesa Välimäki, Juhan Nam, Jonathan S. Abel, Julius O. Smith, "Alias-Suppressed Oscillator based on Differentiated Polynomial Waveforms," *IEEE Transaction on Audio, Speech and Language Processing*, 2010

Conferences Papers (Google Scholar Top 5 in Signal Processing or Music&Musicology)

- Yonghyun Kim, Junhyung Park, Joonhyung Bae, Kirak Kim, Taegyun Kwon, Alexander Lerch, and Juhan Nam, "PianoVAM: A Multimodal Piano Performance Dataset", *Proceedings of the 26th International Society for Music Information Retrieval Conference (ISMIR), 2025*
- Jiyun Park, Carlos Eduardo Cancino-Chacón, Suhit Chiruthapudi, and Juhan Nam, "Matchmaker: an Open Source Library for Real Time Piano Score Following and Systematic Evaluation", *Proceedings of the 26th International Society for Music Information Retrieval Conference (ISMIR), 2025*

· Jaeran Choi, Taegyun Kwon, and Juhan Nam, "Predicting Flutist Onset Timing in Duet Performance: A Multimodal Analysis of Gesture and Breath Cues", *Proceedings of the 26th International Society for Music Information Retrieval Conference (ISMIR), 2025*

· Hayeon Bang, Eunjin Choi, SeungHeon Doh, and Juhan Nam, "PianoBind: A Multi-modal Joint Embedding Model for Pop-piano Music", *Proceedings of the 26th International Society for Music Information Retrieval Conference (ISMIR), 2025*

· Eunjin Choi, Hyerin Kim, Jiwoo Ryu, Juhan Nam, and Dasaem Jeong, "On the De-duplication of the Lakh MIDI dataset", *Proceedings of the 26th International Society for Music Information Retrieval Conference (ISMIR), 2025*

· Geoffroy Peeters, Zafar Rafii, Magdalena Fuentes, Zhiyao Duan, Emmanouil Benetos, Juhan Nam, and Yuki Mitsufuji, "Twenty-Five Years of MIR Research: Achievements, Practices, Evaluations, and Future Challenges", *Proceedings of the IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), 2025*

· Hounsu Kim, Taegyun Kwon, and Juhan Nam, "D3RM: A Discrete Denoising Diffusion Refinement Model for Piano Transcription", *Proceedings of the IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), 2025*

· Jaekwon Im and Juhan Nam, "FlashSR: One-step Versatile Audio Super-resolution via Diffusion Distillation", *Proceedings of the IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), 2025*

· Saebyul Park, Halla Kim, Jiye Jung, Juyong Park, Jeounghoon Kim, and Juhan Nam, "Quantitative Analysis of Melodic Similarity in Music Copyright Infringement Cases", *Proceedings of the 25th International Society for Music Information Retrieval Conference (ISMIR), 2024*

· Music Discovery Dialogue Generation Using Human Intent Analysis and Large Language Model Seungheon Doh, Keunwoo Choi, Daeyong Kwon, Taesoo Kim, and Juhan Nam *Proceedings of the 25th International Society for Music Information Retrieval Conference (ISMIR), 2024*

· Seungheon Doh, Minhee Lee, Dasaem Jeong, and Juhan Nam, "Enriching Music Descriptions with A Finetuned-LLM and Metadata for Text-to-Music Retrieval", *Proceedings of the IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), 2024*

· Yoonjin Chung, Junwon Lee, and Juhan Nam, "T-Foley: A Controllable Waveform-domain Diffusion Model for Temporal-event-guided Foley Sound Synthesis", *Proceedings of the IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), 2024*

· Wootaek Lim and Juhan Nam, "Enhancing Spatial Audio Generation with Source Separation and Channel Panning Loss", *Proceedings of the IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), 2024*

· Jaekwon Im and Juhan Nam, "DIFFRENT: A Diffusion Model for Recording Environment Transfer of Speech", *Proceedings of the IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), 2024*

· Jiyun Park, Sangeon Yong, Taegyun Kwon, and Juhan Nam, "A Real-time Lyrics Alignment System Using Chroma and Phonetic Features For Classical Vocal Performance", *Proceedings of the IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), 2024*

· Hounsu Kim, Soonbeom Choi, and Juhan Nam, "Expressive Acoustic Guitar Sound Synthesis With an Instrument-specific Input Representation and Diffusion Outpainting", *Proceedings of the IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), 2024*

· Yeonghyeon Lee, Inmo Yeon, Juhan Nam, and Joon Son Chung, "VoiceLDM: Text-to-speech with Environmental Context", *Proceedings of the IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), 2024*

· Seungheon Doh, Keunwoo Choi, Jongpil Lee and Juhan Nam, "LP-MusicCaps: LLM-Based Pseudo Music Captioning", *Proceedings of the 24th International Society for Music Information Retrieval Conference (ISMIR), 2023*

· Haven Kim, Kento Watanabe, Masataka Goto, and Juhan Nam, "A Computational Evaluation Framework for Singable Lyric Translation", *Proceedings of the 24th International Society for Music Information Retrieval Conference (ISMIR), 2023*

- Seungheon Doh, Minz Won, Keunwoo Choi, and Juhan Nam, "Textless Speech-to-Music Retrieval Using Emotion Similarity", *Proceedings of the IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), 2023*
- Seungheon Doh, Minz Won, Keunwoo Choi, and Juhan Nam, "Toward Universal Text-to-Music Retrieval", *Proceedings of the IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), 2023*
- Hyemi Kim, Jiyun Park, Taegyun Kwon, Dasaem Jeong, and Juhan Nam, "A Study of Audio Mixing Methods for Piano Transcription in Violin-Piano Ensembles", *Proceedings of the IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), 2023*
- Sangeon Yong, Li Su, and Juhan Nam, "A Phoneme-informed Neural Network Model for Note-level Singing Transcription", *Proceedings of the IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), 2023*
- Eunjin Choi, Yoonjin Chung, Seolhee Lee, Jong Ik Jeon, Taegyun Kwon, and Juhan Nam, "YM2413-MDB : A Multi-Instrumental FM Video Game Music Dataset with Emotion Annotations", *Proceedings of the 23nd International Society for Music Information Retrieval Conference (ISMIR), 2022*
- Yuya Yamamoto, Juhan Nam, and Hiroko Terasawa, "Analysis and Detection of Singing Techniques in Repertoires of J-POP Solo Singers", *Proceedings of the 23nd International Society for Music Information Retrieval Conference (ISMIR), 2022*
- Sangeun Kum, Jongpil Lee, Keunhyoung Luke Kim, Taehyoung Kim, and Juhan Nam, "Pseudo-Label Transfer from Frame-Level to Note-Level in a Teacher-Student Framework for Singing Transcription from Polyphonic Music", *Proceedings of the IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), 2022*
- Soonbeom Choi and Juhan Nam, "A Melody-Unsupervision Model for Singing Voice Synthesis", *Proceedings of the IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), 2022*
- Keunhyoung Kim, Jongpil Lee, Sangeun Kum, and Juhan Nam, "Learning a Cross-Domain Embedding Space of Vocal and Mixed audio with a Structure-Preserving Triplet Loss", *Proceedings of the 22nd International Society for Music Information Retrieval Conference (ISMIR), 2021*
- Hsiao-Tzu Hung, Joann Ching, Seungheon Doh, Nabin Kim, Juhan Nam, and Yi-Hsuan Yang, "EMOPIA: A Multi-Modal Pop Piano Dataset For Emotion Recognition and Emotion-based Music Generation", *Proceedings of the 22nd International Society for Music Information Retrieval Conference (ISMIR), 2021*
- Taejun Kim, Minsuk Choi, Evan Sacks, Yi-Hsuan Yang, and Juhan Nam, "A Computational Analysis of Real-World DJ Mixes using Mix-To-Track Subsequence Alignment," *Proceedings of the 21st International Society for Music Information Retrieval Conference (ISMIR), 2020*
- Taegyun Kwon, Dasaem Jeong, and Juhan Nam, "Polyphonic Piano Transcription Using Autoregressive Multi-Note-State Model", *Proceedings of the 21st International Society for Music Information Retrieval Conference (ISMIR), 2020*
- Jongpil Lee, Nicholas J. Bryan, Justin Salamon, Zeyu Jin, and Juhan Nam, "Metric Learning VS Classification for Disentangled Music Representation Learning", *Proceedings of the 21st International Society for Music Information Retrieval Conference (ISMIR), 2020*
- Sangeun Kum, Jing-Hua Lin, Li Su, and Juhan Nam, "Semi-Supervised Learning Using Teacher-Student Models for Vocal Melody Extraction", *Proceedings of the 21st International Society for Music Information Retrieval Conference (ISMIR), 2020*
- Jongpil Lee, Nicholas J. Bryan, Justin Salamon, Zeyu Jin, and Juhan Nam, "Disentangled Multidimentional Metric Learning for Music Similarity", *Proceedings of the IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, 2020
- Soonbeom Choi, Wonil Kim, Saebyul Park, Sangeon Yong, and Juhan Nam, "Korean Singing Voice Synthesis Based on Auto-Regressive Boundary Equilibrium GAN", *Proceedings of the IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, 2020
- Saebyul Park, Jongpil Lee, Taegyun Kwon, Jeounghoon Kim, and Juhan Nam, "A Cross-Scape Plot Representation for Visualizing Symbolic Melodic Similarity", *Proceedings of the 20th International Society for Music Information Retrieval Conference (ISMIR)*, 2019

· Dasaem Jeong, Taegyun Kwon, Yoojin Kim, and Juhan Nam, "A Hierarchical RNN-based System for Modeling Expressive Piano Performance", *Proceedings of the 20th International Society for Music Information Retrieval Conference (ISMIR)*, 2019

· Jeong Choi, Jongpil Lee, Jiyoung Park, and Juhan Nam, "Zero-shot Learning for Audio-based Music Classification and Tagging", *Proceedings of the 20th International Society for Music Information Retrieval Conference (ISMIR)*, 2019

· Kyungyun Lee and Juhan Nam, "Learning a Joint Embedding Space of Monophonic and Mixed Music Signals for Singing Voice", *Proceedings of the 20th International Society for Music Information Retrieval Conference (ISMIR)*, 2019

· Dasaem Jeong, Taegyun Kwon, Yoojin Kim, and Juhan Nam, "Graph Neural Network for Music Score Data and Modeling Expressive Piano Performance", *Proceedings of the 36th International Conference on Machine Learning (ICML)*, 2019

· Jiyoung Park, Jongpil Lee, Jangyeon Park, Jung-Woo Ha and Juhan Nam, "Representation Learning of Music Using Artist Labels," *Proceedings of the 19th International Society for Music Information Retrieval Conference (ISMIR)*, 2018

· Kyungyun Lee, Keunwoo Choi and Juhan Nam, "Revisiting Singing Voice Detection: a Quantitative Review and the Future Outlook," *Proceedings of the 19th International Society for Music Information Retrieval Conference (ISMIR)*, 2018

· Dasaem Jeong, Taegyun Kwon and Juhan Nam, "A Timbre-based Approach to Estimate Key Velocity from Polyphonic Piano Recordings," *Proceedings of the 19th International Society for Music Information Retrieval Conference (ISMIR)*, 2018

· Sangeon Yong and Juhan Nam, "Singing Expression Transfer from One Voice to Another for a Given Song," *Proceedings of the IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, 2018

· Taejun Kim, Jongpil Lee, and Juhan Nam, "Sample-level CNN Architectures for Music Auto-tagging Using Raw Waveforms," *Proceedings of the IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, 2018

· Sangeun Kum, Changheun Oh and Juhan Nam, "Melody Extraction on Vocal Segments Using Multi-Column Deep Neural Networks," *Proceedings of International Society for Music Information Retrieval Conference (ISMIR)*, 2016

· Juhan Nam, Jorge Hererra, Malcolm Slaney and Julius Smith, "Learning Sparse Feature Representations for Music annotation and Retrieval " *Proceedings of the 12th International Society for Music Information Retrieval (ISMIR)*, 2012

· Juhan Nam, Jiquan Ngiam, Honglak Lee and Malcolm Slaney, "A Classification-Based Polyphonic Piano Transcription Approach Using Learned Feature Representations," *Proceedings of the 11th International Society for Music Information Retrieval (ISMIR)*, 2011.

· Jiquan Ngiam, Aditya Khosla, Mingyu Kim, Juhan Nam, Honglak Lee, Andrew Ng, " Multimodal Deep Learning," *Proceedings of the 28th International Conference on Machine Learning (ICML)*, 2011

· Juhan Nam, Gautham Mysore, Joachim Ganseman, Kyogu Lee, and Jonathan S. Abel, " A super-resolution spectrogram using coupled PLCA," *Proceedings of the 11th Conference of the International Speech Communication Association (InterSpeech)*, September 2010

Patents

· 남주한, 권태균, 정다샘, "피아노 연주의 음정, 세기, 페달의 실시간 자동 채보 및 재현을 위한 컴퓨터 시스템 및 그의 방법", 출원 10-2021-0017377, 2021

· 남주한, 권태균, 정다샘, 김유진, "주어진 악보에 대하여 다양한 스타일의 표현력 있는 피아노 연주를 생성하는 방법 및 장치", 출원 10-2020-0070101, 2020

· 남주한, 이종필, 김태준, "파형 음원 신호를 분석하는 신경망 모델에 기반한 음원 분류 방법 및 분석 장치", 등록 10-2281676-0000, 2021

· 남주한, 권태균, 정다샘, "심층 인공신경망 기반 자동 악보 채보를 이용한 연주 및 악보 정렬 방법 및 시스템" 등록 10-1939001-0000, 2019

· 남주한, 용상언, “가창 표현 이식 시스템”, 등록 10-1966587-0000 (분할), 2019

· 남주한, 용상언, “가창 표현 이식 시스템”, 등록 10-1925217-0000, 2018

· Juhan Nam, Sangeon Yong, “Singing Expression Transfer System”, US patent Application, 16326649, 2019

· Lae-Hoon Kim, Juhan Nam, Erik Visser, ”Access Authorization Based on Synthetic Biometric Data and Non-Biometric Data”, US Patent Application 20160048669, 2016

· Lae-Hoon Kim, Juhan Nam, Erik Visser, ”Systems and Methods to Generate Authorization Data Based on Biometric Data and Non-Biometric Data”, US Patent Application 20160048670, 2016

· Yinyi Guo, Juhan Nam, Erik Visser, Shuhua Zhang, Lae-Hoon Kim, ”Systems and Methods for Speaker Dictionary Based Speech Modeling”, US Patent Application 20150243284, 2015

· Lae-Hoon Kim, Juhan Nam, Erik Visser, ”Systems and Methods for Evaluating Strength of An Audio Password”, US Patent Application 20150220715, 2015

· Gautham J. Mysore, Paris Smaragdis, Juhan Nam, “Sound Mixture Recognition”, US Patent 9,165,565 2015

· Shuhua Zhang, Juhan Nam, Erik Visser, Lae-Hoon Kim, Yinyi Guo, ”Systems and Methods for Enhancing an Audio Signal”, US Patent Application 20150162014, 2015

· Lae-Hoon Kim, Juhan Nam, Erik Visser, ”Systems and Methods for Noise Characteristic Dependent Speech Enhancement”, US Patent Application 20140337021, 2014

· Erik Visser, Lae-Hoon Kim, Yinyi Guo, Juhan Nam, ”Systems and Methods for Audio Signal Processing”, US Patent Application 20130282373, 2013

· Erik Visser, Lae-Hoon Kim, Yinyi Guo, Juhan Nam, ”Systems and Methods for Audio Signal Processing”, US Patent Application 20130282372, 2013

SELECTED ARTWORKS AND DEMOS

Performances and Demos

· “X-Space: KAISTxDAC Performance Laboratory”, *Daejeon Arts Center*, Sep 28, 2024

· “Sumi Jo (조수미) x AI Piano Performance”, *Innovate Korea 2024*, Jun 5, 2024

· “International Symposium on AI and Music Performance: Lecture Concert”, *KAIST*, Dec 1, 2023

· “Jasmin Choi (최나경) x AI Piano Performance”, *20th Anni. Concert of Daejeon Art Center*, Oct 10, 2023

· “Sumi Jo (조수미) x AI Piano Performance”, *Innovate Korea 2023*, Jun 27, 2023

· “Haydn Avent, AI Pianist”, *Daejeon Arts Center Spring Festival*, Apr 15-17, 2022

· “Somi Jo Concert, AI Pianist”, *KAIST Culture Concert*, Jan 6, 2022

· “AI Piano Duet Performance with Human Pianist”, *카이스트 50주년 기념 개식 행사*, Feb 2021

· “KAIST AI Piano: Automatic Music Transcription and Reperformance”, *AI Festival AI:UM*, Sep 2020

· “VirtuosoNet: AI Pianist”, *Daejeon AI Festival*, Jul 2019

Exhibitions

· “Unlocking Time - AR-Ghost, HUT-GUT”, Supervised, *The Korea Foundation, XR Gallery Special Exhibition*, Sep, 2024 - Jan, 2025

· “Game and Art: Auguries of Fantasy”, Organizer, *Daejeon Museum of Art Creation Center*, Jun - Aug, 2021

· “Game and Art: Auguries of Fantasy”, Organizer, *Daejeon Museum of Art Creation Center*, Jun - Aug, 2021

· “Mixedscape”, Seungsoon Park, Jongpil Lee, Taewan Kim, Joonhyung Bae, *Yeonnamjang Gallery*, Dec 17-23, 2020

· “Deep Space Music”, NOS Visuals and KAIST Mac Lab, *Daejeon Museum of Art Special Exhibition: Ways of Seeing* , Nov 2019 - Jan 2020

· "NEUROSCAPE: Artificial Soundscape Based on Multimodal Connections of Deep Neural Networks", Seungsoon Park, Jongpil Lee, and Juhan Nam, *International Computer Music Conference (ICMC)*, Aug 2018

SELECTED TALKS

International (Keynote, Invited Talk, and Seminars)

· "My Journey Toward Musically Intelligent Machine ", Center for Computer Research in Music and Acoustics (CCRMA), Stanford University, USA (Invited Talk) *Nov 2024*

· "Human-AI Music Ensemble", KAIST & RIKEN-AIP Joint Workshop, Korea (Invited Talk) *Sep 2024*

· "AI for Music Understanding, Generation, and Performance", Max Planck Institute for Empirical Aesthetics, Germany (Invited Talk) *Sep 2024*

· "KAIST Music and Audio Computing Lab Research Introduction", Johannes Kepler University, Austria (Invited Talk) *Sep 2024*

· "Human-AI Music Ensemble and its Application to Music Education", Dagstuhl Seminar, Germany (invited talk) *Jul 2024*

· "Human-AI Music Ensembles on Stage and Lessons Learned", International Symposium on AI and Music Performance, Korea (invited talk) *Jun 2023*

· "AI and Music Technology: The Current State and Future", Yamaha Global R&D Meetup, Japan (Keynote) *Jun 2023*

· "AI for Classical Music Performance", Music, Math, and Language Workshop, Korea (Invited Talk) *Jun 2023*

· "Music and AI", Institute of Music Science and Engineering (IMSE), King Mongkut's Institute of Technology Ladkrabang, Online (Invited Talk) *Jun 2023*

· "Current State and Future of Music AI", International Copyright Technology Conference, Korea (Invited Talk) *Nov 2022*

· "Deep Learning for Expressive Piano Performance Rendering", Workshop on AI in Music and Live Concert in conjunction with the 4th IEEE AI & VR (Keynote) *Nov 2021*

· "Music Auto-Tagging: from Audio Classification to Word Embedding", NLP4MusA Workshop in conjunction with ISMIR 2021 (Invited Talk) *Nov 2021*

· "What is The Future of Audio Representation for Music?", Dagstuhl Seminar, Germany *Feb 2022*

· "Metric Learning for Music Information Retrieval", ISMIR 2020, (Tutorial) *Oct 2020*

· "Deep Metric Learning for Music", UPF Music Technology Group, Spain (Invited Talk) *Nov 2019*

· "Social Voice Processing", Dagstuhl Seminar, Germany *Jan 2019*

· "Recent Deep Learning Research for MIR", Johannes Kepler University, Austria (Invited Talk) *Jul 2017*

Domestic (초청강연)

· "오디오 생성 AI", 현대기아자동차 남양연구소 *Nov 2024*

· "인공지능 시대의 음악 창작과 연주", 한국그래픽스학회 *Jul 2024*

· "음악 공연을 위한 인공 지능", 한국문화경제학회 *Jul 2024*

· "음악 AI 분야 소개 및 전망", 중앙대 작곡과 *May 2024*

· "인공지능과 음악 연주", 이화여대 음악교육대학원 *Dec 2023*

· "Sound Design: from DSP to AI ", 현대기아자동차 남양연구소 *Nov 2023*

· "Music AI 분야 소개 및 현황", 삼성 미기연 워크샵 *Nov 2023*

· "음악 AI의 현재와 예술 교육", 한국디자인학회 *Oct 2023*

· "음악 AI 분야 연구 현황 및 미래", NC Developer Party, NCSoft *Jun 2023*

· "음악 창작 AI 기술의 현재와 이슈", 한국포스트휴먼연구회 *Nov 2022*

· “Deep Learning for Music Information Retrieval”, LG AI Research *Jun 2022*
· “MIR for Music Performance Analysis”, 연세대 음악연구소 *Apr 2022*
· “AI for Classical Music Performance”, 국립심포니오케스트라 *Oct 2021*
· “AI for Classical Music Performance”, 국립아시아문화전당 *Jul 2021*
· “Academic Panel Discussion, Art and Tech Week”, 한국문화예술위원회 *Feb 2021*
· “AI Meets Music”, 국립과학관 *Sep 2020*
· “AI Piano and Artistic Possibility”, Art Center Nabi *Sep 2020*
· “Towards Musically Intelligent Machine”, KAIST AI+X Forum *May 2019*
· “Audio-based Music Recommendation Using Deep Learning”, NAVER AI Colloquium 2019 *Apr 2019*
· “Music Performance Machine”, 한국로봇종합학회 (Special Talk) *Jan 2019*
· “Music Technology in the Age of AI and Classic Music”, 한국피아노학회 *Jul 2017*
· “Music Technology in the Age of AI”, EE Seminar, Postech *May 2017*
· “Towards Musically Intelligent Machine”, Goethe-Institut Seoul *Nov 2017*
· “Music Technology in the Age of AI”, World Science and Culture Forum *Oct 2016*
· “Current Status and Future Directions of Music Technology”, 대전문화재단 *Apr 2016*