Curriculum Vitae (Last update: Feb 1, 2022)

Juhan Nam

Korea Advanced Institute of Science and Technology (KAIST)
Graduate School of Culture Technology
291 Daehak-ro, Yuseong-gu, Daejeon, 34141, South Korea
juhan.nam@kaist.ac.kr
https://mac.kaist.ac.kr/~juhan

ACADEMIC APPOINTMENTS

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

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

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

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
- GCT535: Sound Technology for Multimedia
- CTP431: Music and Audio Computing

Lab Stuents

- Current Students: 15 PhDs and 10 MSs
- Former Students: 5 PhDs and 19 MSs (who earned the degrees)

SELECTED ACADEMIC SERVICES

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

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

Program Co-Chair *Nov 2020 - Nov 2021*
International Society for Music Information Retrieval (ISMIR) Conference

SELECTED AWARDS AND HONORS

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

RESEARCH INTERESTS

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

SELECTED PUBLICATIONS

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

Journals and Conference Papers

· 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, Yi-Hsuan Yang, and Juhan Nam, "Reverse-Engineering The Transition Regions of Real-World DJ Mixes using Sub-band Analysis with Convex Optimization", *Proceedings of the New Interfaces for Musical Expression (NIME), 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

· 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

· 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

· 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
- 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
- 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
- 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
- Jongpil Lee, Jiyoung Park, Keunhyoung Luke Kim and Juhan Nam, "Sample-level Deep Convolutional Neural Networks for Music auto-tagging Using Raw Waveforms," *Proceedings of the 14th Sound and Music Computing Conference (SMC)*, 2017
- Taegyun Kwon, Dasaem Jeong and Juhan Nam, "Audio-to-Score Alignment of Piano Music Using RNN-based Automatic Music Transcription," *Proceedings of the 14th Sound and Music Computing Conference (SMC)*, 2017
- 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
- 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
- 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

- 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, 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
- 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

SELECTED TALKS

International

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

Domestic

- "AI for Classical Music Performance", Korean Symphony Orchestra *Oct 2021*
- "AI for Classical Music Performance", Asia Culture Center *Jul 2021*
- "AI for Music Composition, Performance", and Listening, Seoul National University *Mar 2021*
- "Academic Panel Discussion, Art and Tech Week", Arts Council Korea *Feb 2021*
- "AI Meets Music", National Science Museum *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", Korea Robotics Society Annual Conference (Special Talk) *Jan 2019*
- "Music Technology in the Age of AI and Classic Music", Piano Society of Korea *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", Daejeon Culture Foundation *Apr 2016*

FULL LISTS

ACADEMIC EMPLOYMENT

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

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

Visiting Scholar *Aug 2019 - Jul 2020*
Music and Audio Research Lab, New York University

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

INDUSTRY EMPLOYMENT

Neutune, Seoul, South Korea *Apr 2020 - Present*
Advisor (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)

AWARDS AND HONORS

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

Adobe Research Gift Funds *2019, 2020*
Adobe Research

Impact Research Awards *2020*
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

Humanities and Sciences Graduate Fellowship *2006*
Department of Music, Stanford University

AWARDS AND HONORS (GIVEN TO MY STUDENTS)

IEEE ICASSP Student Travel Grant (Jongpil Lee) *2020*
IEEE Signal Processing Society

Global Leadership Award (Dasaem Jeong) *2020*
KAIST

Creative Activity Initiative Award (Jeong Choi) *2020*
KAIST

VR/AR Grand Challenge Award (Yoojin Kim) *2019*
Korea VR Festival 2019

Best Poster Award (Taegyun Kwon) *2019*
KAIST NAVER Clova AI Workshop

Excellence Presentation Award (Sangeon Yong) *2019*
Korean Society of Speech Sciences

Undergraduate Research Program Excellence Award (Dongwoo Suh, Kyungyun Lee) *2017*
KAIST

TEACHING

KAIST Courses

- GCT634/AI613: Musical Applications of Machine Learning *2016, 2018-2021*
- GCT535: Sound Technology for Multimedia *2015, 2017, 2021*
- CTP431: Music and Audio Computing *2015-2018*
- GCT742: Game Design Project *2020-2022*
- GCT731: Topics in Music Technology *2014*
- GCT501: Introduction to Culture Technology *2016*
- CTP201: Introduction to Culture Technology *2016*

Workshop Lectures

- CCRMA summer workshop, KAIST, South Korea *2008*
- Kurzweil Computer Music Camp, Baekseok University, South Korea *2003, 2005*

ADVISING ACTIVITY

Current Students

- PhD Students (15): Kyungsoo Chun, Saebyul Park, Sangeon Yong, Soonbeom Choi, Taegyun Kwon, Taejun Kim, Wonil Kim, Minsuk Choi, Wootaek Lim, Seungheon Doh, Hyemi Kim, Joonhyung Bae, Seungsoon Park, Eunjin Choi, Jaekwon Im
- Master Students (10): Young June Choi, Seolhee Lee, Houn Su Kim, Haven Kim, Jiyun Park, Yoonjin Chung, Carolina Carusi, Jongsoo Kim, Hayeon Bang, Hyeyoon Cho

Former PhD Students

- Jongpil Lee (MS 2017, PhD 2021): CEO (co-founder), Neutune
- Sangeun Kum (MS 2016, PhD 2021): Research Scientist (co-founder), Neutune
- Keunhyoung Kim (PhD 2021): Research Scientist/Software Engineer (co-founder), Neutune
- Dasaem Jeong (PhD 2020): Assistant Professor, Sogang University
- Seunghun Kim (PhD 2016): Researcher, LG Electronics

Former MS Students

- Jaekwon Im (MS 2022): PhD Student, KAIST (MAC Lab)
- Eunjin Choi (MS 2022): PhD Student, KAIST (MAC Lab)
- Kyungyun Lee (MS 2021): Machine Learning Engineer, Weverse
- Yoojin Kim (MS 2021): Researcher, Samsung Electronics
- Seungheon Doh (MS 2021): PhD Student, KAIST (MAC Lab)
- Taewan Kim (MS 2020): Design Researcher, Neutune
- Jeong Choi (MS 2020): Researcher, Naver

· Wonil Kim (MS 2020): PhD Student, KAIST (MAC Lab)
· Minsuk Choi (MS 2020): PhD Student, KAIST (MAC Lab)
· Halla Kim (MS 2020, co-supervision): PhD Student, KAIST
· Chaelin Park (MS 2019): UI/UX Designer, LOTTE e-commerce
· Taegyun Kwon (MS 2018): PhD Student, KAIST (MAC Lab)
· Seungsoon Park (MS 2018): Artist/ Neutune (Co-founder, Chief Creative Officer)
· Soonbeom Choi (MS 2018): PhD Student, KAIST (MAC Lab)
· Jiyoung Park (MS 2018): Software Engineer, Naver
· Jongpil Lee (MS 2017): PhD Student, KAIST (MAC Lab)
· Sangeon Yong (MS 2017): PhD Student, KAIST (MAC Lab)
· Taehyoung Kim (MS 2017): Software Engineer, Neutune
· Sangeun Kum (MS 2016): PhD Student, KAIST (MAC Lab)
· Hyungjoong Kim (MS 2016, co-supervision): Media Artist
· Minju Jung (MS 2016, co-supervision): PhD Student, KAIST
· Sohyeong Lee (MS, 2016, co-supervision): PhD Student, Seoul National University
· Sangwon Seo (MS, 2015, co-supervision): Researcher, ETRI

Undergraduate Research Program (URP) and Interns

· p , \준휘, …익, 1지윤, ¡윤근 (KAIST): 2022
· @ ˜ H (Georgia Institute of Technology) : 2021
· @ 현 (KAIST) : 2018
· 이경연 (KAIST), Ù ° (KAIST) : 2017
· 이1호 (KAIST) : 2015

High School Research and Education Programs

· 이현 , pÐ준, @현ü, 이 H (R&E, Daejeon Science High School): 2021
· @경=, 이 훈, 황 ü (R&E, KSA) : 2018
· Ð 재 (HRP, KSA) : 2018
· p ″ (HRP, KSA) : 2017

PUBLICATIONS

International Journals

· Sarah Kim, Jeong Mi Park, Seungyeon Rhyu, Juhan Nam, Kyogu Lee, "Quantitative Analysis of Piano Performance Proficiency Focusing on Difference Between Hands", *PLOS ONE*, 2021

· Leonardo Gabrielli, György Fazekas, and Juhan Nam, "Special Issue on Deep Learning for Applications in Acoustics: Modeling, Synthesis, and Listening (Editorial)", *Applied Sciences*, 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

· Doheum Park, Juhan Nam, and Juyong Park, "Novelty and Influence of Creative Works, and Quantifying Patterns of Advances Based On Probabilistic References Networks", *EPJ Data Science*, 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

· Hendrik Purwins, Bob Sturm, Bo Li, Juhan Nam, and Abeer Alwan, "Introduction to the Issue on Data Science: Machine Learning for Audio Signal Processing (Editorial)," *IEEE Journal of Selected Topics in Signal Processing*, 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

· Seunghun Kim, Graham Wakefield and Juhan Nam, "Augmenting Environmental Interaction in Audio Feedback Systems," *Applied Sciences*, 2016

· 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

International Conferences and Workshops: Peer-Reviewed Full Papers

· 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*

· Seungheon Doh, Junwon Lee, and Juhan Nam, "Music Playlist Title Generation: A Machine-Translation Approach", *Proceedings of the 2nd Workshop on NLP for Music and Spoken Audio (NLP4MuSA), 2021*

· Yuya Yamamoto, Juhan Nam, Hiroko Terasawa, and Yuzuru Hiraga, "Investigating Time-Frequency Representations for Audio Feature Extraction in Singing Technique Classification", *Proceedings of the 13th Asia Pacific Signal and Information Processing Association Annual Summit and Conference (APSIPA), 2021*

· 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*

· Seungsoon Park, Jongpil Lee, Taewan Kim, Tae Hong Park, Joonhyung Bae, and Juhan Nam, "Mixed Scape: Development of Framework and Artwork for Auditory Correspondence in Mixed Reality", *Proceedings of International Computer Music Conference (ICMC), 2021*

· Taejun Kim, Yi-Hsuan Yang, and Juhan Nam, "Reverse-Engineering The Transition Regions of Real-World DJ Mixes using Sub-band Analysis with Convex Optimization", *Proceedings of the New Interfaces for Musical Expression (NIME), 2021*

· Wonil Kim and Juhan Nam, "Drum Sample Retrieval from Mixed Audio via a Joint Embedding Space of Mixed and Single Audio Samples", *Proceedings of the 149th Audio Engineering Society Convention (AES), 2020*

· 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*

· Wonil Kim and Juhan Nam, "Drum Sample Retrieval from Mixed Audio via a Joint Embedding Space of Mixed and Single Audio Samples", *Proceedings of the 149th Audio Engineering Society Convention (AES)*, 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

· Dasaem Jeong, Taegyun Kwon, Yoojin Kim, and Juhan Nam, "Score and Performance Features for Rendering Expressive Music Performances", *Proceedings of the Music Encoding Conference*, 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

· Jongpil Lee, Jiyoung Park, Sangeun Kum, Youngho Jeong and Juhan Nam, "Combining Multi-Scale Features Using Sample-level Deep Convolutional Neural Networks for Weakly Supervised Sound Event Detection,"

Proceedings of the 2nd Workshop on Detection and Classification of Acoustic Scenes and Events (DCASE), 2017

· Edward Jangwon Lee, Sangeon Yong, Soonbeom Choi, Liwei Chan, Roshan Peiris and Juhan Nam, "Use the Force: Incorporating Touch Force Sensors into Mobile Music Interaction," *Proceedings of the 13th International Symposium on Computer Music Multidisciplinary Research (CMMR)*, 2017

· Dasaem Jeong and Juhan Nam, "How the Rhythm Is Actually Performed in the First Movement of the Beethoven's Seventh Symphony," *Proceedings of the 10th International Conference of Students of Systematic Musicology (SysMus)*, 2017

· Jongpil Lee, Jiyoung Park, Keunhyoung Luke Kim and Juhan Nam, "Sample-level Deep Convolutional Neural Networks for Music auto-tagging Using Raw Waveforms," *Proceedings of the 14th Sound and Music Computing Conference (SMC)*, 2017

· Taegyun Kwon, Dasaem Jeong and Juhan Nam, "Audio-to-Score Alignment of Piano Music Using RNN-based Automatic Music Transcription," *Proceedings of the 14th Sound and Music Computing Conference (SMC)*, 2017

· Dasaem Jeong and Juhan Nam, "Note Intensity Estimation of Piano Recordings by Score-informed NMF," *Proceedings of the Audio Engineering Society Conference on Semantic Audio (AES)*, 2017

· Sangeon Yong, Edward Jangwon Lee, Roshan Peiris, Liwei Chan and Juhan Nam, "ForceClicks: Enabling Efficient Button Interaction with Single Finger Touch," *Proceedings of the International Conference on Tangible, Embedded and Embodied Interactions (TEI)*, 2017

· 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

· Dasaem Jeong and Juhan Nam, "Visualizing Music in its Entirety using Acoustic Features: Music Flowgram," *Proceedings of the 2nd International Conference on Technologies for Music Notation and Representation (TENOR)*, 2016

· Seunghun Kim, Graham Wakefield and Juhan Nam "Augmenting Room Acoustics and System Interaction for Intentional Control of Audio Feedback," *Proceedings of the 41st International Computer Music Conference (ICMC)*, 2015

· Sangwon Suh, Juhan Nam and Sung-hee Lee, " SoniControl: Gesture Recognition System for Electric Guitar Using VLF Beacon Signals," *Proceedings of the 15th International Conference on New Interfaces for Musical Expression (NIME)*, 2015

· Seunghun Kim, Juhan Nam and Graham Wakefield, "Toward Certain Sonic Properties of an Audio Feedback System by Evolutionary Control of Second-Order Structures," *Proceedings of the 4th International Conference (and 12th European event) on Evolutionary and Biologically Inspired Music, Sound, Art and Design (Evostar)*, 2015

· Kyogu Lee, Ziwon Hyung, Juhan Nam, "Acoustic scene classification using sparse feature learning and event-based pooling", *IEEE Workshop on Applications of Signal Processing to Audio and Acoustics (WASPAA)*, 2013

· 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, Gautham J. Mysore and Paris Smaragdis, "Sound Recognition in Mixtures," *Proceedings of the International Conference on Latent Variable Analysis and Signal Separation (LVA/ICA)*, 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

· Jussi Pekonen, Juhan Nam, Julius O. Smith, Jonathan S. Abel and Vesa Välimäki, " On Minimizing the Look-Up Table Size in Quasibandlimited Classical Waveform Oscillators," *Proceedings of the 13th Int. Conference on Digital Audio Effects (DAFx)*, September 2010

· Jussi Pekonen, Vesa Välimäki, Juhan Nam, Julius O. Smith, Jonathan S. Abel, "Variable Fractional Delay Filters in Bandlimited Oscillator Algorithms for Music Synthesis," *Proceedings of International Conference on Green Circuits and Systems*, 2010

· Juhan Nam, Vesa Välimäki, Jonathan S. Abel, Julius O. Smith, "Alias-free virtual analog oscillators using a feedback delay loop," *Proceedings of the 12th Int. Conference on Digital Audio Effects (DAFx)*, September 2009

· Juhan Nam, Jonathan S. Abel, Julius O. Smith, "A Method for Estimating Interaural Time Difference for Binaural Synthesis," *Proceedings of the 125th Audio Engineering Society Convention (AES)*, October 2008

· Juhan Nam, Miriam A. Kolar, Jonathan S. Abel, "On the Minimum-phase Nature of Head-Related Transfer Functions," *Proceedings of the 125th Audio Engineering Society Convention (AES)*, October 2008

International Conferences and Workshops: Peer-reviewed Abstracts/Extended Abstracts, and Late-breakings/Demos

· SeungHeon Doh, Jongpil Lee, and Juhan Nam, "Million Song Search: Web Interface for Semantic Music Search Using Musical Word Embedding", *Late Breaking Demo in the 22st International Society for Music Information Retrieval Conference (ISMIR), 2021*

· Yoojin Kim, Jeongmi Park, Dasaem Jeong, Taegyun Kwon, Jonghwa Park, and Juhan Nam, "Emotion Classification and Analysis of Expressive Performances in Classical Piano Music", *Proceedings of the 16th International Conference on Music Perception and Cognition (ICMPC16), 2021*

· Ju-Sung Ham, Youjeong Hong, Jeongmi Park, Jonghwa Park, Juhan Nam, and Kyogu Lee, "Communication of Emotion Modified by the Performer in Classical Piano Pieces", *Proceedings of the 16th International Conference on Music Perception and Cognition (ICMPC16), 2021*

· Sarah Kim, Seungyeon Rhyu, Juhan Nam, and Kyogu Lee, "Correlation Analysis Between Both Hands and Musical Score for Quantitative Evaluation of Piano Performance", *Proceedings of the 16th International Conference on Music Perception and Cognition (ICMPC16), 2021*

· Soonbeom Choi, Wonil Kim, Saebyul Park, Sangeon Yong, and Juhan Nam, "Children's Song Dataset for Singing Voice Research", *Late Breaking Demo in the 21st International Society for Music Information Retrieval Conference (ISMIR), 2020*

· Sangeon Yong, Soonbeom Choi, and Juhan Nam, "PyTSMod: A Python Implementation of Time-Scale Modification Algorithms", *Late Breaking Demo in the 21st International Society for Music Information Retrieval Conference (ISMIR), 2020*

· Seungheon Doh, Jongpil Lee, Tae Hong Park, and Juhan Nam, "Musical Word Embedding: Bridging the Gap between Listening Contexts and Music", *Machine Learning for Media Discovery Workshop, International Conference on Machine Learning (ICML), 2020*

· Jeong Choi, Jongpil Lee, Jiyoung Park, and Juhan Nam, "Zero-shot Learning and Knowledge Transfer in Music Classification and Tagging", *Machine Learning for Music Discovery Workshop, the 36th International Conference on Machine Learning (ICML)*, 2019

· Jongpil Lee, Jiyoung Park, and Juhan Nam, "Representation Learning of Music Using Artist, Album, and Track information", *Machine Learning for Music Discovery Workshop, the 36th International Conference on Machine Learning (ICML)*, 2019

· Taewan Kim and Juhan Nam, "Sonicanvas : An Audio Reactive Graphics Created Along Frequency Band", *Proceedings of the 25th International symposium on electronic art (ISEA)*, 2019

· Wonil Kim and Juhan Nam, "Easy Jazz: Web-based Jazz Improvisation System", *Proceedings of the 25th International symposium on electronic art (ISEA)*, 2019

· Jeong Choi, Chaelin Park, Halla Kim, Wonil Kim, and Juhan Nam, "MeloDraw: A System for Melodic Contour Search from Embedded Space Using Line Drawings", *Proceedings of the 25th International symposium on electronic art (ISEA)*, 2019

· Dasaem Jeong, Taegyun Kwon and Juhan Nam, "VirtuosoNet: A Hierarchical Attention RNN for Generating Expressive Piano Performance from Music Score," *Workshop on Machine Learning for Creativity and Design, Neural Information Processing Systems (NeurIPS)*, 2018

· Jiyoung Park, Donghyun Kim, Jongpil Lee, Sangeun Kum and Juhan Nam, "A Hybrid of Deep Audio Feature and i-vector for Artist Recognition," *Joint Workshop on Machine Learning for Music, the 34th International Conference on Machine Learning (ICML)*, 2018

· Jongpil Lee, Taejun Kim, Jiyoung Park and Juhan Nam, "Raw Waveform-based Audio Classification Using Sample-level CNN Architectures," *Machine Learning for Audio Signal Processing Workshop, Neural Information Processing Systems (NIPS)*, 2017

· Dasaem Jeong, Taegyun Kwon, Chaelin Park and Juhan Nam, "PerformScore: Toward Performance Visualization with the Score on the Web Browser", *Late Breaking Demo in the 18th International Society for Musical Information Retrieval Conference (ISMIR)*, 2017

· Dongwoo Suh, Kyungyun Lee, Jongpil Lee, Jiyoung Park and Juhan Nam, "Music Galaxy Hitchhiter: 3D Web Music Navigation Through Audio Space Trained with Tag and Artist Labels", *Late Breaking Demo in the 18th International Society for Musical Information Retrieval Conference (ISMIR)*, 2017

· KeunHyoung Luke Kim, Sangeun Kum, Chae Lin Park, Jongpil Lee, Jiyoung Park and Juhan Nam, "Building K-POP Singing Voice Tag Dataset: A Progress Report", *Late Breaking Demo in the 18th International Society for Musical Information Retrieval Conference (ISMIR)*, 2017

· Adrian Kim, Soram Park, Jangyeon Park, Jung-Woo Ha, Taegyun Kwon and Juhan Nam, "Automatic DJ Mix Generation Using Highlist Detection", *Late Breaking Demo in the 18th International Society for Musical Information Retrieval Conference (ISMIR)*, 2017

· Jongpil Lee and Juhan Nam, "Multi-Level and Multi-Scale Feature Aggregation Using Sample-level Deep Convolutional Neural Networks for Music Classification," *Machine Learning for Music Discovery Workshop, International Conference on Machine Learning (ICML)*, 2017

· Seunghun Kim, Changheun Oh, Graham Wakefield and Juhan Nam, "Sonic participation in the evolving audio feedback system," *Proceedings of The 22nd International Symposium on Electronic Art (ISEA)*, 2016

· Kyoungsoo Chun, Jinah Kwak and Juhan Nam, "Characteristics of Non-linguistic Vocalizations as Auditory Emoticons", *Proceedings of International Conference on Music Perception and Cognition (ICMPC)*, 2016

· Saebyul Park, Seunghun Kim, Dasaem Jeong, Juhan Nam, Jeounghoon Kim "Melodic and Harmonic Similarity for Music Plagiarism: Comparison between computational analysis and perceptual evaluation," *the Society for Music Perception and Cognition (SMPC)*, 2015

· Juhan Nam, Ziwon Hyung and Kyogu Lee, "Acoustic Scene Classification Using Sparse Feature Learning and Selective Max-Pooling by Event Detection," *IEEE AASP Challenge on Detection and Classification of Acoustic Scenes and Events*, 2013

Domestic Journal and Conference

· @ ¬ |, ø, 유 ¹ 연, ¨ ü 한, 이교구, "양 • (이 | 중 ì 으 \ 한 피아 x 연 ü (Ä 에 0 x É „ ", 한국 음향 학회 ″ 계 공 Ù 학 회, 2020

· @ 유진, ä Ø, 권 Ü 균, ø, ¨ ü 한, "t ˜ Ý 피아 x 음악에 감 \ 현 À 화에 0 x 연 ü ¹ 징 „ ", 한국 음향 학회 ″ 계 공 Ù 학 회, 2020

· © Á 언, ¨ ü 한, "가 = 음 Ð 의 음악 \ 현 이 Ý Ü ¤ \", 한국 음 1 학회, 2019

· \ ″, ¨ ü 한, "Conditional GAN 0 가 = 합 1 Ü ¤ \", 한국 음 1 학회, 2019

· Tae Hyoung Kim and Juhan Nam, "Visualization of Singing Expression Using Vibrato Lissajous Figures," *Proceedings of the HCI Korea*, 2017

· Jongpil Lee, Tae Hyoung Kim, Sangeun Kum, Keunhyoung Luke Kim, Changheun Oh and Juhan Nam, "Investigation on Vocal Tags and Singer Similarity of K-pop," *Proceedings of the Acoustical Society of Korea Spring Conference*, 2016

· Tae Hyoung Kim and Juhan Nam, "Real-Time Singer Pitch Modification System Using PSOLA," *Proceedings of the Acoustical Society of Korea Spring Conference*, 2016

· Juhan Nam, "A Study of Sinusoid Generation Using Recursive Algorithms," Emile, *Journal of Korea Electro-Acoustic Music Society (KEAMS)*, 2005.

Patents

· ¨ ü한, 권Ü균, ä Ø, "피아x 연ü의 음 , 8 0, ˜ ì의 ä Ü간 자Ù D ô 재현을 위한 ô è 0 Ü ¤ \ 그의) •", œ Ð 10-2021-0017377, 2021

· ¨ ü한, 권Ü균, ä Ø, @유진, "ü어진 악ô에 하여 ä양한 ¤ À일의 \ 현% 있" 피아x 연ü | Ý 1하") • 장X", œ Ð 10-2020-0070101, 2020

· ¨ ü한, 이…필, @ Ü준, " 형 음Ð à호 | „ 하" à경Ý ¨ x에 0 한 음Ð „ X) • „ 장X", ñ] 10-2281676-0000, 2021

· ¨ ü한, 권Ü균, ä Ø, "ì 5 인공à경Ý 0 자Ù 악ô D ô | 이©한 연ü 악ô ,) • Ü ¤ \" ñ] 10-1939001-0000, 2019

· ¨ ü한, © Á언, "가 = \ 현 이Ý Ü ¤ \", ñ] 10-1966587-0000 („ 할), 2019

· ¨ ü한, © Á언, "가 = \ 현 이Ý Ü ¤ \", ñ] 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

ARTWORKS AND DEMOS

Exhibitions

· "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

Performances and Demos

· "AI Piano Duet Performance with Human Pianist", *카 t ¤ 트 50 ü D 0 P Ý ‰ ¬*, Feb 2021

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

· "AI Pianist", *2019 ø ˜ x ¬ ì 포 À Ä*, Dec 2019

· "VirtuosoNet: AI Pianist", *Daejeon AI Festival*, Jul 2019

GRANTS AND PROJECT FUNDS (CALCULATED ON $1 = 1,000 KRW)

Grants

· Adobe Research Gift Funds (2019-2020): PI, $30,000
· Samsung Research Funds (2017-2020, 3 years): PI, $600,000
· National Research Foundation of Korea, (2019-2020, 2 years): PI, $87,500
· National Research Foundation of Korea, (2015-2018, 3 years): PI, $147,000
· KAIST New Faculty Grant (2014-2017, 3 years): PI, $100,000

Industry and Government Projects

· Small and Medium Business Administration (2021-2022, 8 months): co-PI, $25,000
· Korea Creative Content Agency: Copyright Tech (2020-2022, 3 years): co-PI, $80,000
· Korea Creative Content Agency: R&D training (2020-2022, 3 years): PI, $2,800,000
· NCSOft (2021-2022, 1 year): PI, $100,000
· NCSOft (2020-2021, 3 months): PI, $20,000
· SKTelecom (2020, 6 months): PI, $70,000
· Seoul Business Agency (2019-2020, 1 year): co-PI, $120,000
· SKTelecom (2018, 8 months): PI, $50,000
· NAVER (2017-2019, 2 years): PI, $200,000
· KAIST AI-project planning (2018, 3 months): PI, $20,000
· Korea Creative Content Agency (2016-2018, 3 years): Co-PI, $295,000
· Jameasy (2016-2017, 12 months): PI, $50,000
· ETRI (2017, 8 months): Co-PI, $30,000

ACADEMIC SERVICES

International Conference/Workshop Organization and Chairing

· Co-organizers, Dagstuhl Seminar, 2022
· Program chair, International Society for Music Information Retrieval (ISMIR) Conference, 2021
· Academic Director, International Symposium on Electronic Art (ISEA), 2019
· Workshop Chair, International Computer Music Conference (ICMC), 2018
· Session Chair, IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), 2018

International Conference Program Committee (Meta Reviewer)

· Interspeech, Area Chair, 2022
· Sound and Music Computing Conference (SMC), 2021-2022
· The 2nd Workshop on NLP for Music and Spoken Audio (NLP4MusA), 2021

International Journal Editor

· Associate Technical Editor, Journal of Audio Engineering Society (AES), 2021-Present
· Guest Editor, Applied Sciences, Special issue "Deep Learning for Applications in Acoustics: Modeling, Synthesis, and Listening", 2019
· Guest Editor, IEEE Journal of Selected Topics in Signal Processing, 2018

Paper Review Activities

· International Conference on Representation Learning (ICLR), 2022
· AAAI Conference on Artificial Intelligence (AAAI), 2022
· Neural Information Processing Systems Foundation Conference (NeurIPS), 2021

· International Conference on Music Information Retrieval (ISMIR), 2012, 2014-2015, 2017-2020
· International Conference on Acoustics, Speech and Signal Processing (ICASSP), 2010-2012, 2018-2022
· Sound and Music Computing Conference (SMC), 2017-2021
· Audio Engineering Society Conference on Semantic Audio (AES), 2017
· Detection and Classification of Acoustic Scenes and Events (DCASE), 2017-2021
· International Computer Music Conference (ICMC), 2008, 2018-2019
· International Conference on Digital Audio Effect (DAFx), 2010, 2017
· International Conference on Latent Variable Analysis and Signal Separation (LVA/ICA), 2010
· International Workshop on Advances in Music Information Research (AdMIRe), 2012
· IEEE Workshop on Applications of Signal Processing to Audio and Acoustics (WASPAA), 2019
· IEEE Transactions on Audio, Speech and Language Processing, 2010-2020
· IEEE Transaction on Multimedia, 2015, 2017, 2021
· IEEE Signal Processing Letters, 2012, 2021
· ACM Computing Survey, 2019
· Applied Sciences, 2016-2019
· EURASIP Journal on Advances in Signal Processing, 2010
· EURASIP Journal on Audio, Speech and Music Processing, 2015
· ELSEVIER Journal on Computer and Electrical Engineering, 2010
· International Journal of Distributed Sensor Networks, 2013

Academic Memberships

· Member, IEEE - Signal Processing Society
· Member, Audio Engineering Society (AES)
· Member, International Society of Music Information Retrieval (ISMIR)

Domestic Academic and Society Services

· President, Korean Society for Music Perception and Cognition, 2021-Present
· Committee of Scientific Affairs, Korean Society for Music Perception and Cognition, 2015-2021
· Associate Editor, Korea Smart Media Journal, 2018 - Present
· Organizer, KAISTxSNU Music and Audio Workshop, 2019
· Organizer, Machine Intelligence for Music Listening, Performance, and Creation, HCI Korea Workshop, 2017
· Program Committee, World Science and Culture Forum (Daejeon), 2016-2019

PhD Dissertation Committees

· 40+ KAIST students (CT and EE)
· 10+ SNU students (SNU Graduate School of Convergence Science and Technology)
· 1 Ewha Woman's University student (Department of Content Convergence)
· 1 Universitat Pompeu Fabra student (Music Technology Group, Spain)

BOOK / MEDIA ARTICLES

· 게임: ø ˜ 을 위한 € 이 0 , Œ „ ü :X Á X p (Ü Ä 록) *Nov 2021*
· 인공지 ¥ 은 음악 = 작을 어 » 게 Ä ¸ 있을 L ? *MIT Technology Review Korea* *Mar 2021*
· 음악 연 ü 8 à : $ È À € 0 인공지 ¥ 피아 È ¤ ¸ L 지, ´ 떻 Œ ü ƒ x (Ü Ä 록) *Nov 2020*
· 인공지 ¥ Ü 의 음악 = 작, ü Y ü 0 *Oct 2018*
· 인공지 ¥ Ü 의 음악 0 , *See Futures* *Sum 2017*
· 인공지 ¥ 은 인간의 감 을 ¨) 할 있을 L , *CT Insight* *2016*

MEDIA COVERAGE

· AI 피아 È ¤ ¸ , '한국의 ü = ' p 1 진 … 연 ü 재현…"AI, 감 1 연 ü € 0 합 ü L 지 가 ¥ ", *AI 타 „ ˆ* *Jul 2021*

· “게임과 , 과학이 Ì ˜ È \ ´ ø ˜ | Ì à ä”, *Ù D | ô* *Jun 2021*

· 인공 지¥(AI)과 음악 (인0 ð 0 ¬), *Ô 석* *Apr 2021*

· 얼굴\ 으\ ´ 감 읽은 AI, 1 Þ ″ 여행지·음악 골|준ä, *8 T | ô* *Mar 2021*

· 한국8화 위Ð회 ‘ 과 0 융합ü간’ 1황¬ … Ì , *Ü ¬ | „* *Feb 2021*

· ’ D엔 2020 인공지¥(AI)’ 연계 (|인 교육 호응, | *ô* *Nov 2020*

· KAIST, 한국인의 감 읽″ 인공지¥ E p이0 Ì à ä, *부°* | *ô* *Sep 2020*

· AI\ 구현 =작 지¥ 거액에 그¼ ″ 1과Ä, • *à 8* *Apr 2020*

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· ’과학, 일Á ä’···KAIST 개)해 AI· ° ü 0 ô인ä, *U 7* *Oct 2019*

· ° 입형 아¸ ”어»게 ü 것인가” Ü, Ü ½ ø 관, *D Ü D* 뉴¤통*à* *Oct 2019*

· AI classifies songs from genres it has never heard before, *VentureBeat* *Jul 2019*

· 음악 AI, 0 핵ì은 % ì Ý...작곡, 연ü, 감Á ¨ à 역 ©, *ä ô* 드½ *Jul 2019*

· 호¨ ¬이언¤ ”인공지¥ 피아È ¤ ¸ | 꿈꾸p” (© 연구 Œ개) ¡), *KBS1 TV* *Jan 2019*

· KAIST, 인공지¥ 0 음악 ″œ Ü ¤ \ 개 , • *à 8* *Aug 2018*

· “AI 피아È ¤ ¸ ” 연구| 지Ð하″ ¼ 1 ø ˜과 연구, *Ù D | ô* *Aug 2018*

INVITED TALKS

Academic Talks (International)

· “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*

· “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*

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

· “Audio Feature Learning for Music Information Research”, A3 Foresight Program Workshop (Invited Talk) *Jan 2015*

Academic Talks (Domestic)

· “AI for Music Composition, Performance, and Listening”, Seoul National University *Mar 2021*

· “Academic Panel Discussion, Art and Tech Week”, Arts Council Korea *Feb 2021*

· “Machine Learning for Music Composition, Performance, and Listening”, NCSoft *Jan 2021*

· “Music and AI”, Handong University *Dec 2020*

· “AI Piano and Artistic Possibility”, Art Center Nabi *Sep 2020*

· “Towards Musically Intelligent Machine”, AI+X Forum, KAIST *May 2019*

· “Audio-based Music Recommendation Using Deep Learning”, NAVER AI Colloquium 2019 *Apr 2019*

· “Automatic Music Detection in Media Content”, SKTelecom *Feb 2019*

· “Music Performance Machine”, Korea Robotics Society Annual Conference (Special Talk) *Jan 2019*

· “Music and Audio Classification Using Deep Learning”, ETRI *Oct 2018*

· “The First Wednesday Multidisciplinary Forum”, KAIST *Oct 2018*

· "Music Recommendation Using Deep Learning", GIST *Jul 2018*

· "Music Recommendation Using Deep Learning", NAVER *Jun 2018*

· "Music Technology in the Age of AI and Classic Music", Piano Society of Korea *Jul 2017*

· "Music Technology in the Age of AI", EE Seminar, Postech *May 2017*

· "Virtual Korean Musical Instruments: Current Status and Future Directions", International Symposium on Digital Cultural Heritage *Aug 2016*

· "Audio Feature Learning for Music Information Research", Hanyang University *Feb 2015*

· "Content-based Music Semantic Analysis", Korea Society of Complex Systems *Nov 2014*

· "Learning Feature Representations for Music Classification", GIST *Jun 2014*

· "Learning Feature Representations for Music Classification", Seoul National University *Jun 2012*

Public and Institution Talks (Domestic)

· "Music Performance Machine", Daegu Beomeo Library *Oct 2021*

· "AI for Classical Music Performance", Korean Symphony Orchestra *Oct 2021*

· "Music Performance and AI", Global Center for Gifted Children *Oct 2021*

· "Music Performance and AI", Busan National University of Education *Oct 2021*

· "Introduction to Music Information Retrieval", National Intellectual Property Training Institute *Sep 2021*

· "AI for Classical Music Performance", Asia Culture Center *Jul 2021*

· "R&E Convergence Education", Busan Institute For Gifted Education and Promotion *Jun 2021*

· "The Meeting of Science and Art", Busan Institute For Gifted Education and Promotion *Jan 2021*

· "Music and AI", KNUA, KAIST *Dec 2020*

· "Music and AI", FSA, KAIST *Nov 2020*

· "AI Meets Music", National Science Museum *Sep 2020*

· "AI Piano", 2020 AI Festival *Sep 2020*

· "Music Technology in the Age of AI", Konyang University *Jul 2019*

· "Music Technology in the Age of AI", Gwangju Citizen School *Jul 2019*

· "21C Bach - AI", Innovation Korea 2019, Seoul *Jul 2019*

· "Music Technology in the Age of AI", AI Festival (Daejeon) *Jul 2019*

· "Music Technology in the Age of AI", Software Policy & Research Institute *Apr 2019*

· "AI Music Director", KBS *Oct 2018*

· "Music Technology in the Age of AI", Arte, *Aug 2018*

· "Current Status and Future Directions of Music Technology", SKTelecom *May 2018*

· "Current Status of Music Technology Using Deep Learning", KAIST AI School *Dec 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", Daejeon Culture Foundation *Apr 2016*

· "Current Status and Future Directions of Music Technology", KAIST Summer Camp *Aug 2015*

· "Current Status and Future Directions of Music Technology", Seoul Science High school *Jul 2015*