Minje Kim

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1. POSITIONS HELD

University of Illinois at Urbana-Champaign
- Associate Professor — Jan. 2024 — present
  - Department of Computer Science

Indiana University, Bloomington, IN
- Associate Professor — Jul. 2022 — Dec. 2023
  - Department of Intelligent Systems Engineering, Luddy School of Informatics, Computing and Engineering
- Assistant Professor — Aug. 2016 — Jun. 2022

Amazon.com Inc., Sunnyvale, CA
- Amazon Visiting Academic — Jul. 2020 — present
  - Lab126

Adobe Research, San Francisco, CA
- Research Intern — Summers in 2012 — 2015
  - Creative Technologies Lab

University of Illinois at Urbana-Champaign
- Research Assistant — Fall 2011 — Spring 2015 (except for Fall 2014)
  - Department of Computer Science
- Teaching Assistant — Fall 2014, Fall 2015, Spring 2016
  - Department of Computer Science

ETRI (a national lab in Korea), Daejeon, Korea
- Researcher — Feb. 2006 — Jun 2011
  - Audio Research Team

POSTECH, Pohang, Korea
- Research Assistant — Spring 2004 — Fall 2005 (except for Fall 2004)
  - Department of Computer Science and Engineering
- Teaching Assistant — Fall 2004
  - Department of Computer Science and Engineering

2. EDUCATION

Ph.D. in Computer Science — May. 2016
- University of Illinois at Urbana-Champaign
- Committee: Paris Smaragdis (Advisor), Rob A. Rutenbar (UIUC CS), Mark Hasegawa-Johnson (UIUC ECE), Gautham J. Mysore (Adobe Research)
- Dissertation: "Audio Computing in the Wild: Frameworks for Big Data and Small Computers"

M.S. in Computer Science and Engineering, *Summa Cum Laude* — Feb. 2006
- POSTECH, Pohang, Korea
- Advisor: Seungjin Choi
- Thesis: "Monaural Music Source Separation: Nonnegativity, Sparseness, and Shift-Invariance"

B.E. in Information and Computer Engineering, *Honors* — Feb. 2004
- Ajou University, Suwon, Korea

3. RESEARCH FUNDING

Korean Ministry of Science, ICT and Future Planning ($300,000, approx.) Jan. 2022 — Dec. 2024
- Title: “Research on Low-delay Audio Coding Technology”
- Principal Investigator
- In collaboration with ETRI

MERL ($15,000, unrestricted gift) Sep. 2021
- Principal Investigator

Amazon AWS Cloud Credit for Research ($20,000) Sep. 2021
- Title: "Personalized Voice Synthesis in the Real-World Recording Conditions"
- Principal Investigator

National Science Foundation ($477,952) Apr. 2021 — Mar. 2026
- Title: “CAREER: Personalized Speech Enhancement: Test-Time Adaptation Using No or Few Private Data”
- Principal Investigator

National Science Foundation
($499,808 in total; my portion is about $166,603) Oct. 2019 — Sep. 2022
- Title: “FET: Small: A Portable and Intelligent Testing System for Power-Efficient and Accurate Foodborne Pathogen Detection”
- Co-Principal Investigator (PI: Lei Jiang, Co-PI: Feng Guo)

National Science Foundation
($499,744 in total; my portion is about $5,792) Sep. 2020 — Aug. 2022
- Title: “AI Institute: Planning: AI Institute for Rural Health, Wellness, and Resilience”
- Senior Personnel (PI: D. Crandall, Co-PIs: K. Connelly, K. Siek, S. Sabanovic, D. Wild)

Korean Ministry of Science, ICT and Future Planning
($17M in total; my portion is $405,908) Jan. 2017 — Dec. 2021
- Title: “Research on Audio Signal Analysis/Synthesis Technology Based on Machine Learning”
- Principal Investigator
- In collaboration with ETRI

Adobe Systems Inc. ($5,000, unrestricted gift) May. 2019
- Principal Investigator

Synaptics Inc. ($150,000) Aug. 2017 — Jul. 2019
- Title: “To Tackle Heterogeneity in Real-World Audio Processing Tasks by Using Collaborative Machine Learning Models”
- Principal Investigator

Intel Corporation ($180,000) Jan. 2017 — Dec. 2018
- Title: “Bitwise Deep Recurrent Neural Networks for Efficient Context-Aware Pervasive Systems”
- Principal Investigator

4. HONORS, AWARDS & FELLOWSHIPS

Received

ICLR 2022 Highlighted Reviewer Apr. 2022
- Waived registration fees

NSF CAREER Award Apr. 2021
- NSF's prestigious awards in support of early-career faculty.

Indiana University Trustees Teaching Award Mar. 2021
- The award honors outstanding teaching during the previous academic year (2020-2021)

IEEE Signal Processing Society Best Paper Award Dec. 2020

- Honors the authors of an IEEE SPS journal paper of exceptional merit [J004]

Outstanding Teaching Assistant Fall 2015
- Dept. of Computer Science, UIUC, for the class "Machine Learning for Signal Processing (CS598PS)"

Starkey Signal Processing Research Student Grant Apr. 2014
- For the paper published in ICASSP 2014 [C017]

Google ICASSP Student Travel Grant and AASP Best Student Paper Jun. 2013
- For the paper published in ICASSP 2013 [C012]

Richard T. Cheng Endowed Fellowship Aug. 2011
- As an exceptional incoming student, Dept. of Computer Science, UIUC ($9,999)

Summa Cum Laude Feb. 2006
- For the MS study in Computer Science and Engineering, POSTECH

Graduate with Honor Feb. 2004
- Given to top 10%, Ajou University

University Entrance Scholarship: the Top in the Department Mar. 2000
- A full tuition waiver and stipend for the four years of the undergraduate study, Ajou University

Advised Students' Work

Outstanding Research Award (IU Cognitive Science Program) Apr. 2021
- Advised Kai Zhen's Ph.D. dissertation research

Interspeech 2020 Student Travel Grant Sep. 2020
- Advised Aswin Sivaraman's paper published in Interspeech 2020 [C043]

ICASSP 2020 Finalist for the Best Student Papers Award May 2020
- Advised Sunwoo Kim's paper published in ICASSP 2020 [C041]

Finalists

LVA/ICA 2015 Finalist for the Best Student Papers on Audio Signal Processing Jul. 2015
- For the paper published in LVA/ICA 2015 [C023]

Qualcomm Innovation Fellowship 2015 Finalist Dec. 2014
- 35 finalists out of 146 submitted proposals from 18 participating universities

Intel PhD Fellowship Finalist Feb. 2014
- One of six nominees to represent the University of Illinois in the national competition

Microsoft Research PhD Fellowship Nominee Oct. 2013
- Selected as one of three applicants to represent the Dept. of Computer Science in the University of Illinois

5. TEACHING

Courses Taught

- "Deep Learning Systems" (ENGR-E 533, ISE IU), Fall 2023
- "Machine Learning for Signal Processing" (ENGR-E 511, ISE IU), Spring 2022
- "Deep Learning Systems" (ENGR-E 533, ISE IU), Fall 2021
- "Machine Learning for Signal Processing" (ENGR-E 511, ISE IU), Spring 2021
- "Deep Learning Systems" (ENGR-E 533, ISE IU), Fall 2020
- "Machine Learning for Signal Processing" (ENGR-E 511, ISE IU), Spring 2020
- "Deep Learning Systems" (ENGR-E 533, ISE IU), Fall 2019
- "Deep Learning Systems" (ENGR-E 533, ISE IU), Spring 2019
- "Machine Learning for Signal Processing" (ENGR-E 511, ISE IU), Fall 2018
- "Deep Learning Systems" (ENGR-E 533, ISE IU), Spring 2018
- "Machine Learning for Signal Processing" (ENGR-E 599, ISE IU), Fall 2017
- "Machine Learning for Signal Processing" (ENGR-E 599, ISE IU), Spring 2017

As a Teaching Assistant

- "Probability in Computer Science (CS361)," Dept. of Computer Science, UIUC, Spring 2016
- "Machine Learning for Signal Processing (CS598PS, CS598PSO)," Dept. of Computer Science, UIUC, Fall 2015 **[Outstanding Teaching Assistant Award]**
- "Machine Learning for Signal Processing (CS598PS)," Dept. of Computer Science, UIUC, Fall 2014
- "Automata and Formal Languages," POSTECH, Fall 2004

6. SUPERVISION OF STUDENT RESEARCH

Ph.D. Dissertation Committee Chair (as the Ph.D. Advisor)

Completed

- Sanna Wager (Jan. 2021; Informatics at IU)
  - First job at Amazon Lab126 as an Applied Scientist
  - Dissertation: "Data-Driven Pitch Correction for Singing"
  - Committee: Minje Kim (chair), Christopher Raphael (IU, Computer Science), Donald Williamson (IU, Computer Science), Daniel McDonald (Univ. of British Columbia, Statistics)
- Kai Zhen (Apr. 2021; dual degree in Computer Science and Cognitive Science at IU)
  - First job at Amazon as an Applied Scientist
  - Dissertation: "Neural Waveform Coding: Scalability, Efficiency, and Psychoacoustic Calibration"
  - Committee: Minje Kim (chair), Robert Goldstone (IU, Cognitive Science), Donald Williamson (IU, Computer Science), and Shen Yi (U. of Washington, Speech and Hearing Sciences)
- Sunwoo Kim (May 2022; ISE at IU)
  - First job at Amazon as an Applied Scientist
  - Dissertation: "Model Compression for Efficient Machine Learning Inference"
  - Committee: Minje Kim (chair), Peter Todd (IU Cognitive Science), Christopher Raphael (IU Computer Science), and Fan Chen (IU ISE)
- R. David Badger (May 2022; ISE at IU)
  - First job at Naval Surface Warfare Center Crane Division
  - Dissertation: "Open-Source Classification Systems for Frequency-Domain RF Signals: Robust Physical Layer Multi-Sample Rate Processing"
  - Committee: Minje Kim (chair), Lei Jiang (IU ISE), Lantao Liu (IU ISE), and Ariful Azad (IU ISE)

Ph.D. Candidates

- Aswin Sivaraman (ISE at IU)
- Haici Yang (ISE at IU)
- Anastasia Kuznetsova (CS and Linguistics at IU)
- Darius Petermann (ISE at IU)

Ph.D. Students

- Tsun-An Hsieh (ISE at IU)

Ph.D. Dissertation Committee Membership

Completed

- Supun Kamburugamuve (May 2018; Computer Science at IU; first job at IU)
- Liang Chen (May 2018; Informatics at IU; first job at Google)
- Jerome Mitchell (July 2018; Computer Science at IU; first job at Intel)
- Lei Le (June 2019; Computer Science at IU; first job at Amazon)
- AJ Piergiovanni (April 2020; Computer Science at IU; first job at Google Brain)
- Shrikant Venkataramani (June 2020; ECE at UIUC; first job at Amazon AWS; now at Murf AI as a Senior Research Scientist)
- Yucong Jiang (July 2020; Computer Science at IU; first job at the University of Richmond as an Assistant Professor)

- Matthew Setzler (Dec. 2020; Cognitive Science at IU; first job at Pacific Northwest National Laboratory)
- Xuan Dong (Dec. 2020; Computer Science at IU; first job at Amazon)
- Elise Jing (Jan. 2021; Informatics at IU; First job at Pandora)
- Pulasthi Supun Wickramasinghe (June 2021; Computer Science at IU; first job at Microsoft)
- Vibhatha Abeykoon (June 2021; ISE at IU; first job at Health Data Analytics Institute)
- Qian Lou (July 2021; ISE at IU; first job at Samsung Research)
- Jaeuk Byun (Nov. 2021; EECS at Gwangju Institute of Science and Technology, Korea)
- Tingyi Wanyan (Feb. 2022; ISE at IU; first job at Weill Cornell Medicine as a PostDoc Associate)
- JCS Kadupitiya (Apr. 2022; ISE at IU; first job at Microsoft Azure as Software Engineer)
- Adam Barker (Jun. 2022; ISE at IU; first job at Naval Surface Warfare Center Crane Division)
- Farzane Zokaee (Jul. 2022; ISE at IU; first job at Ampere Computing as an SoC Architect)
- Bo Feng (Oct. 2022; ISE at IU; first job at Meta as a Research Scientist)
- Alan Wu (Mar. 2023; ISE at IU; first job at MIT Lincoln Lab.)
- Zhepei Wang (Aug. 2023; CS at UIUC; first job at Amazon AWS)
- Malintha Fernando (Nov. 2023; ISE at IU; first job at IU as a lecturer)
- Khandokar Md. Nayem (Dec. 2023; Computer Science at IU)
- Yingnan Ju (Dec. 2023; ISE at IU; first job at GE)
- Gaurav Naithani (*as the External Pre-Examiner*; Dec. 2023; Computing and Electrical Engineering at Tampere University)

In Progress

- Aditya Tandon (Informatics at IU)
- Tyler Balson (ISE at IU)
- Grace Li (ISE at IU)
- Zhenhua Chen (CS at IU)
- Yuchen Liu (CS at IU)

PhD Advisory Committee Membership (for Qualifying Exams)

Completed

- AJ Piergiovanni (Computer Science at IU)
- Pulasthi Supun Wickramasinghe (Computer Science at IU)
- Xuan Dong (Computer Science at IU)
- Qian Lou (ISE at IU)
- Yingnan Ju (ISE at IU)
- Donghyeon Yun (Speech and Hearing Science at IU)
- JCS Kadupitiya (ISE at IU)
- Aditya Tandon (Informatics at IU)
- Khandokar Md. Nayem (Computer Science at IU)
- Grace Li (ISE at IU)
- Farzane Zokaee (ISE at IU)
- Malintha Fernando (ISE at IU)
- Tyler Balson (ISE at IU)
- Nicholas Majeske (ISE at IU)
- Bo Feng (ISE at IU)
- Selahattin Akkas (ISE at IU)
- Ziwei Zhao (CS at IU)
- Kaitlin Pet (Informatics at IU)
- Jong Sung Park (ISE at IU)
- Zheng Chen (ISE at IU)

Independent Study

- Aswin Sivaraman (ISE at IU): "Self-supervised learning for personalized speech enhancement," Spring 2022
- Haici Yang (ISE at IU): "Predictive models for neural speech coding," Spring 2022
- Darius Petermann (ISE at IU): "Hyper-autoencoded architecture for audio coding," Spring 2022
- Sunwoo Kim (ISE at IU): “Scalable deep learning for speech enhancement,“ Fall 2021
- Aswin Sivaraman (ISE at IU): “Self-supervised learning for music source separation,“ Fall 2021
- R. David Badger (ISE at IU): “CNN for RF signal processing in various sampling rates,“ Fall 2021
- Haici Yang (ISE at IU), “Generative models for speech coding,” Fall 2021
- Darius Petermann (ISE at IU), “Spatially-informed music source separation,” Fall 2021
- Sunwoo Kim (ISE at IU): “Knowledge distillation for finetuning,“ Spring 2021
- Aswin Sivaraman (ISE at IU): “Self-supervised learning for speech enhancement,“ Spring 2021
- R. David Badger (ISE at IU): “CNN for RF signal processing in various sampling rates,“ Spring 2021
- Sunwoo Kim (ISE at IU): “Adversarial optimization for finetuning,“ Fall 2020
- Aswin Sivaraman (ISE at IU): “Ensemble models for no-shot learning,“ Fall 2020
- R. David Badger (ISE at IU): “SVD for RF signal compression,“ Fall 2020
- Haici Yang (ISE at IU), “Source-aware neural audio coding,” Fall 2020
- Sunwoo Kim (ISE at IU): “Boosting for hashing,“ Spring 2020
- Aswin Sivaraman (ISE at IU): “Sparse mixture of local experts,“ Spring 2020
- R. David Badger (ISE at IU): “SVD for RF signal compression,“ Spring 2020
- Haici Yang (ISE at IU), “Source-aware neural audio coding,” Spring 2020
- Shivani Firodiya (Computer Science at IU), “Controllable speech enhancement,” Spring 2020
- Shivani Firodiya (Computer Science at IU), “Controllable speech enhancement,” Fall 2019
- Haici Yang (ISE at IU), “Modular networks for audio processing,” Fall 2019
- R. David Badger (ISE at IU), “CNN for RF signal processing,” Fall 2019
- Sunwoo Kim (ISE at IU), “Boosted locality sensitive hashing,” Fall 2019
- Kai Zhen (Computer Science at IU): “Deep learning for end-to-end speech coding,“ Spring 2019
- R. David Badger (ISE at IU): “Radio frequency machine learning,“ Spring 2019
- Sunwoo Kim (ISE at IU): “Bitwise machine learning,“ Spring 2019
- Fanbo Sun (ISE at IU): “Genetic algorithm for deep learning,“ Spring 2019
- Kai Zhen (Computer Science at IU): “Deep learning for end-to-end speech coding,“ Fall 2018
- R. David Badger (ISE at IU): “Radio frequency machine learning,“ Fall 2018
- Lijiang Guo (ISE at IU): “Variational autoencoders and linear dynamical systems,“ Fall 2018
- Lijiang Guo (ISE at IU): “Voice activity detection using multimodal models,“ Spring 2018
- Sunwoo Kim (Computer Science at IU): “Capsule networks,“ Spring 2018
- Kai Zhen (Computer Science at IU): “Audio coding,“ Spring 2018
- Aswin Sivaraman (ISE at IU): “Psychoacoustic Models and Neural Networks,“ Fall 2017
- Lijiang Guo (ISE at IU): “Bitwise Source Separation,“ Fall 2017
- Sunwoo Kim (Computer Science at IU): “End-to-end models,“ Fall 2017
- Mrinmoy Maity (Computer Science at IU): “Efficient Hashing,“ Fall 2017
- Kai Zhen (Computer Science at IU): “Psychoacoustic Models and Neural Networks,“ Fall 2017
- Brahmendra Sravan Kumar Patibandla (Data Science at IU): “LSTM autoencoders,“ Summer 2017
- Vibhatha Abeykoon (ISE at IU): “Denoising autoencoders,“ Spring 2017
- Sanna Wager (Informatics at IU): “Dereverberation in the multi-channel environment,“ Spring 2017
- Sanna Wager (Informatics at IU): “Concatenative Sound Synthesis,“ Fall 2016
- Mrinmoy Maity (Computer Science at IU): “Bitwise Recurrent Neural Networks,“ Fall 2016, Spring 2017
- Lijiang Guo (ISE at IU): “Hashing-based fully bitwise source separation,“ Spring 2017
- Lijiang Guo (ISE at IU): “Deep Learning and Parallel Computing,“ Fall 2016
- Zhaozhi Zhang (ISE at IU): Coursework advisor, Fall 2016

Mentoring Undergraduate Thesis Research at UIUC

- Aswin Sivaraman: "Quantization Error Tolerance in Hashed Audio Spectra," Fall 2014 – Spring 2015
- Vinay Maddali: "Multichannel Audio Source Separation Using Probabilistic Latent Component Sharing," Fall 2012 – Spring 2013
- Igor Fedorov: "Timbre Exchange Among Speakers Using Source-Filter Model," Fall 2011 – Spring 2012

7. PROFESSIONAL ACTIVITIES

Journal Editor

- IEEE/ACM Transactions on Audio, Speech, and Language Processing, *Senior Area Editor*
- European Association for Signal Processing (EURASIP) Journal on Audio, Speech, and Music Processing, *Associate Editor*
- IEEE Open Journal of Signal Processing, *Consulting Associate Editor*
- IEEE Journal of Selected Topics in Signal Processing; Special Issue on "Neural Speech and Audio Coding," *Guest Editor*

Professional Memberships

- IEEE Audio and Acoustic Signal Processing Technical Committee (2024), *Vice Chair*
- IEEE Audio and Acoustic Signal Processing Technical Committee (2018-2020, 2021-2023), *Elected Member*
  - Reviews subcommittee (2022), *Chair*
    (including the senior meta-reviewer role for 555 papers in the ICASSP 2023 AASP track)
  - Reviews subcommittee (2021), *Vice Chair*
    (including the senior meta-reviewer role for 450 papers in the ICASSP 2022 AASP track)
  - Nominations and Elections subcommittee (2020), *Chair*
- IEEE, *Senior Member*
- IEEE Signal Processing Society, *Member*
- International Speech Communication Association (ISCA), *Member*

Conference Chair

- General Chair
  - IEEE Workshop on Applications of Signal Processing to Audio and Acoustics (WASPAA) 2023, *General Chair*
  - Hands-free Speech Communication and Microphone Arrays (HSCMA) 2024; a satellite workshop of ICASSP 2024, *Organizing Chair*
- Organizing Committee
  - IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP) 2024, *Seasonal School & Short Course Co-Chair*
- Special Session Chair
  - IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP) 2023, "Neural Speech and Audio Coding: Emerging Challenges and Opportunities," *Special Session Co-Chair*
- Session Chair
  - IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP) 2023, "Self-Supervised Learning and Data-Efficiency for Speech and Audio," *Session Chair*
  - IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP) 2023, "Music Information Retrieval," *Session Chair*
  - IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP) 2022, "Spatial Audio I," *Session Chair*
  - IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP) 2022, "Deep Learning-Based Single-Channel Speech Enhancement," *Session Chair*
  - IEEE Workshop on Applications of Signal Processing to Audio and Acoustics (WASPAA) 2021, "P3: Array Processing, Room Acoustics, Enhancement, and Audio Events; Demonstrations," *Session Chair*

- IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP) 2021, "Audio and Speech Source Separation 3: Deep Learning," *Session Chair*
- IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP) 2020, "AUD-L2-Deep Learning for Source Separation," *Session Chair*
- IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP) 2019, "AASP-L3: Source Separation and Speech Enhancement I," *Session Chair*
- IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP) 2018, "AASP-L1: Deep Learning-based Speech Separation," *Session Chair*
- IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP) 2017, "AASP-L3: Deep Learning for Source Separation and Enhancement I," *Session Chair*

• Area Chair (meta-reviewer)
- Association for the Advancement of Artificial Intelligence (AAAI) 2024, *Meta-Reviewer*
- European Signal Processing Conference (EUSIPCO) 2022, "Acoustic, Speech and Music Signal Processing," *Area Chair*
- IEEE Workshop on Applications of Signal Processing to Audio and Acoustics (WASPAA) 2021, *Area Chair*
- IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP) 2021, "Audio and Speech Source Separation," *Area Chair*
- IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP) 2020, "Audio and Speech Source Separation," *Area Sub-chair*
- IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP) 2019, "Audio and Speech Source Separation," *Area Sub-chair*

• Local Workshop Organization
- INTEL® Nervana™ AI Academy for Students, Bloomington, IN, Oct. 20, 2017, *Co-Organizer*
- Midwest Music and Audio Day, Bloomington, IN, Jun. 27, 2019, *Organizing Co-Chair*

Journal Reviewer

• IEEE/ACM Transactions on Audio, Speech, and Language Processing
• IEEE Signal Processing Letters
• IEEE Open Journal of Signal Processing
• The Journal of the Acoustical Society of America (JASA)
• Transactions of the International Society for Music Information Retrieval
• Speech Communication
• Journal of the Audio Engineering Society
• European Association for Signal Processing (EURASIP) Journal on Advances in Signal Processing

(Less frequently review for the journals below in the last five years)
- IEEE Transactions on Signal Processing
- IEEE Transactions on Neural Networks and Learning Systems
- IEEE Signal Processing Magazine
- Elsevier Neurocomputing
- Elsevier Signal Processing

Conference Reviewer and Program Committee Member

• Neural Information Processing Systems (NeurIPS)
• International Conference on Machine Learning (ICML)
• International Conference on Learning Representations (ICLR)
- Recognized as a highlighted reviewer (2022)

• International Joint Conference on Artificial Intelligence (IJCAI)
• Association for Advances in Artificial Intelligence (AAAI) Conferences on Artificial Intelligence
• International Conference on Artificial Intelligence and Statistics (AISTATS)
• IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)
• Annual Conference of the International Speech Communication Association (Interspeech)

- IEEE Workshop on Applications of Signal Processing to Audio and Acoustics (WASPAA)
- The International Society for Music Information Retrieval Conference (ISMIR)
- IEEE Workshop on Machine Learning for Signal Processing (MLSP)
- European Signal Processing Conference (EUSIPCO)
- International Workshop on Acoustic Signal Enhancement (IWAENC)

(Less frequently review for the conferences below)

- IEEE International Workshop on Multimedia Signal Processing (MMSP)
- Asian Conference on Machine Learning (ACML)
- International Conference on Latent Variable Analysis and Signal Separation (LVA/ICA)
- Digital Audio Effects (DAFx)
- IEEE Global Conference on Signal and Information Processing (GlobalSIP)
- Joint Conference of Workshops on Statistical and Perceptual Audition and Speech Communication with Adaptive Learning (SAPA-SCALE)

Internal Services at IU

- Director of Graduate Studies (ISE), 2018-2020
  - Led the Graduate Curriculum Committee and the Graduate Admissions Committee
- Data Science Curriculum Committee (Data Science), *Member*, 2017-present
- Data Science Admission Committee (Data Science), *Member*, 2017-2019
- Structure Committee (Luddy at IU), *Member*, 2016-2017
- Graduate Curriculum Committee (ISE), *Member*, 2017-present
- IT Committee (Luddy), *Member*, 2017-present

8. PUBLICATION

International Journal Articles

[J011] Sunwoo Kim, Mrudula Athi, Guangji Shi, ***Minje Kim***, and Trausti Kristjansson, "Zero-Shot Test-Time Adaptation Via Knowledge Distillation for Personalized Speech Denoising and Dereverberation," Journal of the Acoustical Society of America, Vol. 155, No. 2, pp 1353-1367, Feb. 2024.

[J010] Aswin Sivaraman and ***Minje Kim***, "Efficient Personalized Speech Enhancement through Self-Supervised Learning," *IEEE Journal of Selected Topics in Signal Processing*, vol. 16, no. 6, pp. 1342-1356, Oct. 2022.
(Also presented in *ICASSP 2023*).

[J009] Sunwoo Kim and ***Minje Kim***, "Boosted Locality Sensitive Hashing: Discriminative, Efficient, and Scalable Binary Codes for Source Separation," *IEEE/ACM Transactions on Audio, Speech, and Language Processing*, vol. 30, pp. 2659-2672, Aug. 2022.
(Also presented in *ICASSP 2023*).

[J008] Kai Zhen, Jongmo Sung, Mi Suk Lee, Seungkwon Beack, and ***Minje Kim***, "Scalable and Efficient Neural Speech Coding: A Hybrid Design," *IEEE/ACM Transactions on Audio, Speech, and Language Processing*, vol 30, pp. 12-25, 2022.

[J007] Vibhatha Abeykoon, Geoffrey Fox, ***Minje Kim***, Saliya Ekanayake, Supun Kamburugamuve, Kannan Govindarajan, Pulasthi Wickramasinghe, Niranda Perera, Chathura Widanage, Ahmet Uyar, Gurhan Gunduz, Selahatin Akkas, "Stochastic gradient descent-based support vector machines training optimization on Big Data and HPC frameworks," Concurrency and Computation Practice Experience, 2021;e6292. https://doi.org/10.1002/cpe.6292

[J006] Kai Zhen, Mi Suk Lee, Jongmo Sung, Seungkwon Beack, and ***Minje Kim***, "Psychoacoustic Calibration of Loss Functions for Efficient End-to-End Neural Audio Coding," *IEEE Signal Processing Letters*, vol. 27, pp. 2159-2163, 2020.
(Also presented in *ICASSP 2022*).

[J005] Hongwei Wang, Yunlong Gao, Shaohan Hu, Shiguang Wang, Renato Mancuso, ***Minje Kim***, Poliang Wu, Lu Su, Lui Sha, and Tarek Abdelzaher, "On Exploiting Structured Human Interactions to Enhance Sensing Accuracy in Cyber-physical Systems," *ACM Transactions on Cyber-Physical Systems*, vol. 1, no. 3, article 16, pp. 16:1-16:19, Jul. 2017.

[J004] Po-Sen Huang, ***Minje Kim***, Mark Hasegawa-Johnson, and Paris Smaragdis, "Joint Optimization of Masks and Deep Recurrent Neural Networks for Monaural Source Separation," *IEEE/ACM Transactions on Audio, Speech, and Language Processing*, vol. 23, no. 12, pp. 2136-2147, Dec. 2015.
[Winner of 2020 IEEE Signal Processing Society Best Paper Award]

[J003] ***Minje Kim*** and Paris Smaragdis, "Mixtures of Local Dictionaries for Unsupervised Speech Enhancement," *IEEE Signal Processing Letters*, vol. 22, no. 3, pp. 288-292, Mar. 2015
(Also presented in *ICASSP 2015*).

[J002] ***Minje Kim***, Jiho Yoo, Kyeongok Kang and Seungjin Choi, "Nonnegative Matrix Partial Co-Factorization for Spectral and Temporal Drum Source Separation," *IEEE Journal of Selected Topics in Signal Processing*, vol. 5, no. 6, pp. 1192-1204, Oct. 2011.

[J001] Seungkwon Beack, Taejin Lee, ***Minje Kim***, and Kyeongok Kang, "An Efficient Time-Frequency Representation for Parametric-Based Audio Object Coding," *ETRI Journal*, vol. 33, no. 6, pp. 945-948, Dec. 2011.

Refereed International Conference Proceedings

[C063] ***Minje Kim*** and Trausti Kristjansson, "Scalable and Efficient Speech Enhancement Using Modified Cold Diffusion: a Residual Learning Approach," in Proc. *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Seoul, Korea, Apr. 14-19, 2024.

[C062] Haici Yang, Inseon Jang, and ***Minje Kim***, "Generative De-Quantization for Neural Speech Codec via Latent Diffusion," in Proc. *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Seoul, Korea, Apr. 14-19, 2024.

[C061] Kahyun Choi, and ***Minje Kim***, "A Comparative Analysis of Poetry Reading Audio: Singing, Narrating, or Somewhere In Between?," in Proc. *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Seoul, Korea, Apr. 14-19, 2024.

[C060] Darius Petermann, and ***Minje Kim***, "Hyperbolic Distance-Based Speech Separation," in Proc. *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Seoul, Korea, Apr. 14-19, 2024.

[C059] Inseon Jang, Haici Yang, Wootaek Lim, Seungkwon Beack, and ***Minje Kim***, "Personalized Neural Speech Codec," in Proc. *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Seoul, Korea, Apr. 14-19, 2024.

[C058] Anastasia Kuznetsova, Aswin Sivaraman, and ***Minje Kim***, "The Potential of Neural Speech Synthesis-Based Data Augmentation for Personalized Speech Enhancement," in Proc. *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Rhodes Island, Greece, June 4-10, 2023.

[C057] Haici Yang, Wootaek Lim, and ***Minje Kim***, "Neural Feature Predictor and Discriminative Residual Coding for Low-Bitrate Speech Coding," in Proc. *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Rhodes Island, Greece, June 4-10, 2023.

[C056] Darius Petermann, Inseon Jang, and ***Minje Kim***, "Native Multi-Band Audio Coding within Hyper-Autoencoded Reconstruction Propagation Networks," in Proc. *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Rhodes Island, Greece, June 4-10, 2023.

[C055] Darius Petermann and ***Minje Kim***, "SpaIn-Net: Spatially-Informed Stereophonic Music Source Separation," in Proc. *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Singapore, May 22-27, 2022.

[C054] Sunwoo Kim and ***Minje Kim***, "BLOOM-Net: Blockwise Optimization for Masking Networks Toward Scalable and Efficient Speech Enhancement," in Proc. *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Singapore, May 22-27, 2022.

[C053] Haici Yang, Shivani Firodiya, Nicholas Bryan, and ***Minje Kim***, "Don't Separate, Learn to Remix: End-to-End Neural Remixing with Joint Optimization," in Proc. *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Singapore, May 22-27, 2022.

[C052] Haici Yang, Sanna Wager, Spencer Russell, Mike Luo, ***Minje Kim***, and Wontak Kim, "Upmixing Via Style Transfer: a Variational Autoencoder for Disentangling Spatial Images and Musical Content," in Proc. *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Singapore, May 22-27, 2022.

[C051] Hao Zhang, Srivatsan Kandadai, Harsha Rao, ***Minje Kim***, Tarun Pruthi, Trausti Kristjansson, "Deep Adaptive AEC: Hybrid of Deep Learning and Adaptive Acoustic Echo Cancellation," in Proc. *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Singapore, May 22-27, 2022.

[C050] Darius Petermann, Seungkwon Beack, and ***Minje Kim***, "HARP-Net: Hyper-Autoencoded Reconstruction Propagation for Scalable Neural Audio Coding," in Proc. *IEEE Workshop on Applications of Signal Processing to Audio and Acoustics (WASPAA), New Paltz, NY, Oct. 17–20, 2021.*

[C049] Aswin Sivaraman and ***Minje Kim***, "Zero-Shot Personalized Speech Enhancement through Speaker-Informed Model Selection," in Proc. *IEEE Workshop on Applications of Signal Processing to Audio and Acoustics (WASPAA), New Paltz, NY, Oct. 17–20, 2021.*

[C048] Sunwoo Kim and ***Minje Kim***, "Test-Time Adaptation Toward Personalized Speech Enhancement: Zero-Shot Learning With Knowledge Distillation," in Proc. *IEEE Workshop on Applications of Signal Processing to Audio and Acoustics (WASPAA), New Paltz, NY, Oct. 17–20, 2021.*

[C047] Aswin Sivaraman, Sunwoo Kim and ***Minje Kim***, "Personalized Speech Enhancement through Self-Supervised Data Augmentation and Purification," in Proc. *Annual Conference of the International Speech Communication Association (Interspeech)*, Brno, Czech Republic, Aug. 30 – Sep. 3, 2021.

[C046] R. David Badger, Kristopher H. Jung, and ***Minje Kim***, "An Open-Sourced Time-Frequency Domain RF Classification Framework," in Proc. *European Signal Processing Conference (EUSIPCO)*, Dublin, Ireland, Aug. 23-27, 2021.

[C045] R. David Badger and ***Minje Kim***, "Singular Value Decomposition for Compression of Large-Scale Radio Frequency Signals," in Proc. *European Signal Processing Conference (EUSIPCO)*, Dublin, Ireland, Aug. 23-27, 2021.

[C044] Haici Yang, Kai Zhen, Seungkwon Beack, and ***Minje Kim***, "Source-Aware Neural Speech Coding for Noisy Speech Compression," in Proc. *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Toronto, Canada, Jun. 6-12, 2021.

[C043] Aswin Sivaraman and ***Minje Kim***, "Sparse Mixture of Local Experts for Efficient Speech Enhancement," in Proc. *Annual Conference of the International Speech Communication Association (Interspeech)*, Shanghai, China, Oct. 25-29, 2020.

[C042] Sanna Wager, George Tzanetakis, Cheng-i Wang, and ***Minje Kim***, "Deep Autotuner: A Pitch Correcting Network for Singing Performances," in Proc. *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Barcelona, Spain, May 4-8, 2020.

[C041] Sunwoo Kim, Haici Yang, and ***Minje Kim***, "Boosted Locality Sensitive Hashing: Discriminative Binary Codes for Source Separation," in Proc. *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Barcelona, Spain, May 4-8, 2020.
[Finalist for the Best Student Paper Award]

[C040] Kai Zhen, Mi Suk Lee, Jongmo Sung, Seungkwon Beack, and ***Minje Kim***, "Efficient and Scalable Neural Residual Waveform Coding with Collaborative Quantization," in Proc. *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Barcelona, Spain, May 4-8, 2020.

[C039] Kai Zhen, Mi Suk Lee, and ***Minje Kim***, "A Dual-Staged Context Aggregation Method Towards Efficient End-to-End Speech Enhancement," in Proc. *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Barcelona, Spain, May 4-8, 2020.

[C038] Qian Lou, Feng Guo, ***Minje Kim***, Lantao Liu, and Lei Jiang, "AutoQ: Automated Kernel-Wise Neural Network Quantization", in Proc. *International Conference on Learning Representations (ICLR)*, Addis Ababa, Ethiopia, Apr. 26-30, 2020.

[C037] Kai Zhen, Jongmo Sung, Mi Suk Lee, Seungkwon Beack, and ***Minje Kim***, "Cascaded Cross-Module Residual Learning towards Lightweight End-to-End Speech Coding," in Proc. *Annual Conference of the International Speech Communication Association (Interspeech)*, Graz, Austria, September 15-19, 2019.

[C036] Geoffrey Fox, James A. Glazier, JCS Kadupitiya, Vikram Jadhao, ***Minje Kim***, Judy Qiu, James P. Sluka, Endre Somogyi, Madhav Marathe, Abhijin Adiga, Jiangzhuo Chen, Oliver Beckstein, Shantenu Jha, "Learning Everywhere: Pervasive Machine Learning for Effective High-Performance Computation," in Proc. *IEEE International Workshop on High-Performance Big Data, Deep Learning, and Cloud Computing (HPBDC)*, Rio de Janeiro, Brazil, May 20, 2019.

[C035] Vibhatha Abeykoon, Geoffrey Fox, and ***Minje Kim***, "Performance Optimization on Model Synchronization in Parallel Stochastic Gradient Descent Based SVM," in Proc. *High Performance Machine Learning Workshop (HPML)*, Cyprus, May 14, 2019.

[C034] Sunwoo Kim, Mrinmoy Maity, and ***Minje Kim***, "Incremental Binarization On Recurrent Neural Networks For Single-Channel Source Separation," in Proc. *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Brighton, UK, May 12–17, 2019.

[C033] Sanna Wager, George Tzanetakis, Stefan Sullivan, Cheng-i Wang, John Shimmin, ***Minje Kim***, and Perry Cook, "Intonation: A Dataset of Quality Vocal Performances Refined by Spectral Clustering on Pitch Congruence," in Proc. *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Brighton, UK, May 12–17, 2019.

[C032] Michael Bechtel, Elise McEllhiney, ***Minje Kim,*** and Heechul Yun, "DeepPicar: A Low-cost Deep Neural Network-based Autonomous Car," in Proc. *IEEE International Conference on Embedded and Real-Time Computing Systems and Applications (RTCSA)*, Hakodate, Japan, Aug. 28-31, 2018.

[C031] Sanna Wager and ***Minje Kim***, "Collaborative speech dereverberation: regularized tensor factorization for crowdsourced multi-channel recordings," in Proc. *European Signal Processing Conference (EUSIPCO)*, Rome, Italy, Sep. 3-7, 2018.

[C030] Matt Setzler, Tyler Marghetis, and ***Minje Kim***, "Creative leaps in musical ecosystems: early warning signals of critical transitions in professional jazz," in Proc. Annual Conference of the Cognitive Science Society (*CogSci*), Madison, WI, July 25-28, 2018.

[C029] Lijiang Guo and ***Minje Kim***, "Bitwise Source Separation on Hashed Spectra: An Efficient Posterior Estimation Scheme Using Partial Rank Order Metrics," in Proc. *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Calgary, Canada, April 15-20, 2018.

[C028] ***Minje Kim*** and Paris Smaragdis, "Bitwise Neural Networks for Efficient Single-Channel Source Separation," in Proc. *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Calgary, Canada, April 15-20, 2018.

[C027] Lei Jiang, ***Minje Kim***, Wujie Wen and Danghui Wang, "XNOR-POP: A Processing-in-Memory Architecture for Binary Convolutional Neural Networks in Wide-IO2 DRAMs," in Proc. *IEEE/ACM International Symposium on Low Power Electronics and Design (ISLPED)*, Taipei, Taiwan, July 24-26, 2017.

[C026] ***Minje Kim***, "Collaborative Deep Learning for Speech Enhancement: A Run-Time Model Selection Method Using Autoencoders," in Proc. *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, New Orleans, LA, March 5-9, 2017.

[C025] Sanna Wager, Liang Chen, ***Minje Kim***, and Christopher Raphael, "Towards Expressive Instrument Synthesis Through Smooth Frame-By-Frame Reconstruction: From String To Woodwind," in Proc. *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, New Orleans, LA, March 5-9, 2017.

[C024] ***Minje Kim*** and Paris Smaragdis, "Efficient Neighborhood-Based Topic Modeling for Collaborative Audio Enhancement on Massive Crowdsourced Recordings," in Proc. *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Shanghai, China, March 20-25, 2016.

[C023] ***Minje Kim*** and Paris Smaragdis, "Adaptive Denoising Autoencoders: A Fine-tuning Scheme to Learn from Test Mixtures," in Proc. *International Conference on Latent Variable Analysis and Signal Separation (LVA/ICA)*, Liberec, Czech Republic, August 25-28, 2015.
[Finalist for the Best Student Paper on Audio Signal Processing]

[C022] ***Minje Kim***, Paris Smaragdis, and Gautham J. Mysore, "Efficient Manifold Preserving Audio Source Separation Using Locality Sensitive Hashing," in Proc. *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Brisbane, Australia, April 19-24, 2015.

[C021] Yunlong Gao, Shaohan Hu, Renato Mancuso, Hongwei Wang, ***Minje Kim***, Poliang Wu, Lu Su, Lui Sha, and Tarek Abdelzaher, "Exploiting Structured Human Interactions to Enhance Estimation Accuracy in Cyber-physical Systems," in Proc. *International Conference on Cyber-Physical Systems (ICCPS)*, Seattle, WA, April 14-16, 2015.

[C020] ***Minje Kim*** and Paris Smaragdis, "Efficient Model Selection for Speech Enhancement Using a Deflation Method for Nonnegative Matrix Factorization," in Proc. *IEEE Global Conference on Signal and Information Processing (Global SIP)*, Atlanta, GA, December 3-5, 2014.

[C019] Po-Sen Huang, ***Minje Kim***, Mark Hasegawa-Johnson, and Paris Smaragdis, "Singing-Voice Separation From Monaural Recordings Using Deep Recurrent Neural Networks," in Proc. *International Society for Music Information Retrieval Conference (ISMIR)*, Taipei, Taiwan, Oct. 27-31, 2014.

[C018] Ding Liu, Paris Smaragdis, and ***Minje Kim***, "Experiments on Deep Learning for Speech Denoising," in Proc. *Annual Conference of the International Speech Communication Association (Interspeech)*, Singapore, September 14-18, 2014.

[C017] Po-Sen Huang, ***Minje Kim***, Mark Hasegawa-Johnson, and Paris Smaragdis, "Deep Learning for Monaural Speech Separation," in Proc. *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Florence, Italy, MAY 4-9, 2014.
[Winner of the Starkey Signal Processing Research Student Grant]

[C016] Johannes Traa, ***Minje Kim***, Paris Smaragdis, "Phase and Level Difference Fusion for Robust Multichannel Source Separation," in Proc. *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Florence, Italy, MAY 4-9, 2014.

[C015] Paris Smaragdis and ***Minje Kim***, "Non-Negative Matrix Factorization for Irregularly-Spaced Transforms," in Proc. *IEEE Workshop on Applications of Signal Processing to Audio and Acoustics (WASPAA)*, New Paltz, NY, Oct. 20 – 23, 2013.

[C014] ***Minje Kim*** and Paris Smaragdis, "Single Channel Source Separation Using Smooth Nonnegative Matrix Factorization with Markov Random Fields," in Proc. *IEEE International Workshop on Machine Learning for Signal Processing (MLSP)*, Southampton, UK, Sep. 22 – 25, 2013.

[C013] ***Minje Kim*** and Paris Smaragdis, "Manifold Preserving Hierarchical Topic Models for Quantization and Approximation," in Proc. *International Conference on Machine Learning (ICML)*, Atlanta, Georgia, Jun. 16 – 21, 2013.

[C012] ***Minje Kim*** and Paris Smaragdis, "Collaborative Audio Enhancement Using Probabilistic Latent Component Sharing," in Proc. *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, Vancouver, Canada, May 26 – 31, 2013.
[Winner of the Google ICASSP Student Travel Grant]
[Best Student Paper Award in the Audio and Acoustic Signal Processing (AASP) area]

[C011] C. Zhang, G.G. Ko, J.W. Choi, S.-N. Tsai, ***Minje Kim***, A.G. Rivera, R. Rutenbar, P. Smaragdis, M.S. Park, V. Narayanan, H. Xin, O. Mutlu, B. Li, L. Zhao, M. Chen, and R. Iyer, "EMERALD: Characterization of Emerging Applications and Algorithms for Low-power Devices," in Proc. *IEEE International Symposium on Performance Analysis of Systems and Software (ISPASS)*, Austin, TX, Apr. 21 – 23, 2013.

[C010] ***Minje Kim***, Paris Smaragdis, Glenn G. Ko, and Rob A. Rutenbar, "Stereophonic Spectrogram Segmentation Using Markov Random Fields," in Proc. *IEEE International Workshop on Machine Learning for Signal Processing (MLSP)*, Santander, Spain, Sep. 23 – 26, 2012.

[C009] ***Minje Kim***, Seungkwon Beack, Keunwoo Choi and Kyeongok Kang, "Gaussian Mixture Model for Singing Voice Separation from Stereophonic Music," in Proc. *Audio Engineering Society 43th Conference (AES Conference)*, Pohang, Korea, Sep. 29 – Oct. 1, 2011.

[C008] ***Minje Kim***, Jiho Yoo, Kyeongok Kang and Seungjin Choi, "Blind Rhythmic Source Separation: Nonnegativity and Repeatability," in Proc. *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, Dallas, TX, Mar. 14 – 19, 2010.

[C007] Jiho Yoo, ***Minje Kim***, Kyeongok Kang and Seungjin Choi, "Nonnegative Matrix Partial Co-Factorization for Drum Source Separation," in Proc. *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, Dallas, TX, Mar. 14 – 19, 2010.

[C006] ***Minje Kim***, Seungkwon Beack, Taejin Lee, Daeyoung Jang and Kyeongok Kang, "Segmented Dimensionality Reduction Coding on Frequency Domain Signal," in Proc. *Audio Engineering Society 34th Conference (AES Conference)*, Jeju Island, Korea, Aug. 28 – 30, 2008.

[C005] ***Minje Kim***, Minsik Park, Seung-jun Yang, Ji Hoon Choi and Han-kyu Lee, "System Aspects of TV-Anytime Metadata Codec in a Uni-directional Broadcasting Environment," in Proc. *IEEE International Symposium on Consumer Electronics (ISCE)*, Dallas, TX, Jun. 20 – 23, 2007.

[C004] Seung-jun Yang, Jung Won Kang, Dong-San Jun, ***Minje Kim***, and Han-kyu Lee, "TV-Anytime Metadata Authoring Tool for Personalized Broadcasting Services," in Proc. *IEEE International Symposium on Consumer Electronics (ISCE)*, Dallas, TX, Jun. 20-23, 2007.

[C003] ***Minje Kim*** and Seungjin Choi, "ICA-based Clustering for Resolving Permutation Ambiguity in Frequency-Domain Convolutive Source Separation," in Proc. *IEEE International Conference on Pattern Recognition (ICPR)*, Hong Kong, Aug. 20 – 24, 2006.

[C002] ***Minje Kim*** and Seungjin Choi, "Monaural Music Source Separation: Sparseness, Nonnegativity and Shift-invariance," in Proc. *International Conference on Latent Variable Analysis and Signal Separation (LVA/ICA)*, pp. 617-624, Charleston, SC, Mar. 5 – 8, 2006. (LNCS 3889).

[C001] ***Minje Kim*** and Seungjin Choi, "On Spectral Basis Selection for Single Channel Polyphonic Music Separation," in Proc. *International Conference on Artificial Neural Networks (ICANN)*, Warsaw, Poland, Sep. 11 – 15, 2005. (LNCS 3697).

Book Chapters

[B001] ***Minje Kim*** and Paris Smaragdis, "Efficient Source Separation Using Bitwise Neural Networks," Audio Source Separation, Springer International Publishing, 2018.
DOI: 10.1007/978-3-319-73031-8, ISBN: 978-3-319-73031-8 (E-book), 978-3-319-73030-1 (Hard-cover)
[Amazon][Springer Website]

Other Papers

[M003] Seung Hak Lee, ***Minje Kim***, Han Gil Seo, Byung-Mo Oh, Gangpyo Lee, and Ja-Ho Leigh, "Assessment of Dysarthria Using One-Word Speech Recognition with Hidden Markov Models," *Journal of Korean Medical Science*, 34(13):e108, Apr. 2019.

[M002] ***Minje Kim*** and Paris Smaragdis, "Bitwise Neural Networks," *International Conference on Machine Learning (ICML) Workshop on Resource Efficient Machine Learning*, Lille, France, Jul. 6-11, 2015

[M001] ***Minje Kim*** and Paris Smaragdis, "Collaborative Audio Enhancement: Crowdsourced Audio Recording, " *Neural Information Processing Systems (NIPS) Workshop on Crowdsourcing and Machine Learning*, Montreal, Canada, Dec. 8-13, 2014

9. TUTORIALS, OTHER TALKS & POSTERS

Tutorials

- "Personalized Speech Enhancement: Data- and Resource-Efficient Machine Learning," Interspeech 2022 [slides]

Invited Talks

- "Personalized AI for Speech Enhancement and Music Applications," GIST, Gwangju, Korea, Jun. 1, 2023"

- "Personalized AI for Speech Enhancement and Music Applications," Sogang University, Seoul, Korea, May 26, 2023
- "Data- and Resource-Efficient Machine Learning for Personalized Speech Enhancement," Johns Hopkins University, Center for Language and Speech Processing, Baltimore, MD, USA, Dec. 2, 2022
- "Data- and Resource-Efficient Machine Learning for Personalized Speech Enhancement," Samsung Research, Korea, May 26, 2022
- "Latent Representations for Audio Music Signal Processing," Graduate School of Culture Technology, KAIST, Daejeon, Korea, May 20, 2022
- "Data Efficiency and Privacy Preservation for Personalized Machine Learning Models: from the Perspective of Audio Applications," POSTECH, Pohang, Korea, Dec. 15, 2021 (virtual)
- "Toward Scalable, Efficient, and Perceptually Meaningful Neural Waveform Coding," Fraunhofer IIS, Erlangen, Germany, Dec. 3, 2021 (virtual)
- "Data Efficiency and Privacy Preservation for Personalized Machine Learning Models: from the Perspective of Audio Applications," School of Computer Science and Electrical Engineering, Handong Global University, Korea, Mar. 31, 2021 (virtual)
- "Efficient Neural Audio Processing Models," Dept. of Electrical and Computer Engineering, University of Rochester, Rochester, NY, Dec. 11, 2019
- A half-day seminar on audio and speech processing at Amazon Lab126, Sunnyvale, CA, Dec. 6, 2019
- "Audio Computing in the Wild: Frameworks for Collaborative and Efficient AI," Department of Music and Performing Arts Professions and Center for Data Science, New York University, Mar. 19, 2018
- "Using Bitwise Machine Learning Models for Resource-Constrained Edge Devices," Int'l Conf. on Parallel Architectures and Compilation Techniques (PACT) Workshop on Computational Intelligence and Soft Computing (CISC 2017), Sep. 10, 2017
- "Bitwise Deep Recurrent Neural Networks for Efficient Context-Aware Pervasive Systems," Intel Labs., Hillsboro, OR, Aug. 16, 2017
- "Audio Computing in the Wild: Frameworks for Big Data and Small Computers," Graduate School of Culture Technology, KAIST, Daejeon, Korea, Oct. 7, 2016
- "Audio Computing in the Wild: Frameworks for Big Data and Small Computers," Graduate School of Convergence Science and Technology, Seoul National University, Suwon, Korea, Oct. 6, 2016
- "Audio Computing in the Wild: Frameworks for Big Data and Small Computers," Qualcomm Korea, Seoul, Korea, Oct. 6, 2016
- "Audio Computing in the Wild: Frameworks for Big Data and Small Computers," Hanyang University, Seoul, Korea, Apr. 6, 2016
- "Audio Computing in the Wild: Frameworks for Big Data and Small Computers," ETRI, Daejeon, Korea, Mar. 29, 2016
- "Audio Computing in the Wild: Frameworks for Big Data and Small Computers," Naver Labs, Seongnam, Korea, Mar. 29, 2016
- "Audio Computing in the Wild: Frameworks for Big Data and Small Computers," Google, Mountain View, CA, Mar. 9, 2016
- "Audio Computing in the Wild: Frameworks for Big Data and Small Computers," School of Informatics and Computing, Indiana University, Bloomington, IN, Feb. 29, 2016
- "Audio Computing in the Wild: Frameworks for Big Data and Small Computers," Lyric Labs, Analog Devices, Cambridge, MA, Feb. 23, 2016
- "Audio Computing in the Wild: Frameworks for Big Data and Small Computers," Adobe Research, San Francisco, CA, Feb. 10, 2016
- "Audio Computing in the Wild: Frameworks for Big Data and Small Computers," IBM T. J. Watson Research Center, Yorktown Heights, NY, Jan. 7, 2016
- Lyric Labs, Analog Devices, Cambridge, MA, Jun. 12, 2012
- "Music Source Separation: Spectrogram Factorization," Sejong University, Seoul, Korea, Jun. 10, 2011

Panels

- Jan Skoglund, ***Minje Kim***, and Lars Villemoes, "Can AI-based methods revamp audio coding?" AES Convention 2023, New York, Oct. 27, 2023.

Talks at Non-Archival Venues

- "Self-Supervised Learning from Contrastive Mixtures for Personalized Speech Enhancement," NeurIPS 2020 Self-Supervised Learning for Speech and Audio Processing Workshop, Dec. 11, 2020 (virtual)
- "Deep Autotuner: A Data-Driven Approach to Natural-Sounding Pitch Correction for Singing Voice in Karaoke Performances," Midwest Music and Audio Day, Bloomington, IN, Jun. 27, 2019
- "On psychoacoustically weighted cost functions towards resource-efficient deep neural networks for speech denoising," Seventh Annual Midwest Cognitive Science Conference, Bloomington, IN, May 12, 2018
- "Bitwise Source Separation," Midwest Music and Audio Day, Northwestern University, Evanston, IL, Jun. 23, 2017

Poster Presentations at Non-Archival Venues

- "Efficient Personalized Speech Enhancement through Self-Supervised Learning," Speech and Audio in the Northeast (SANE) 2022, Oct. 6, 2022
- "Bitwise Source Separation on Hashed Spectra: An Efficient Posterior Estimation Scheme Using Partial Rank Order Metrics," Speech and Audio in the Northeast (SANE) 2018, Oct. 18, 2018
- U.S. Air Force Science and Technology 2030, Bloomington, IN, May 10, 2018
- "Bitwise Source Separation on Hashed Spectra: An Efficient Posterior Estimation Scheme Using Partial Rank Order Metrics," NIPS 2017 workshop on Machine Learning for Audio, Dec. 8, 2017
- "Bitwise Neural Networks for Efficient SingleChannel Source Separation," NIPS 2017 workshop on Machine Learning for Audio, Dec. 8, 2017
- IEEE EnCON, Indiana University, Bloomington, IN, Nov. 10-11, 2017
- "Bitwise Neural Networks for Source Separation," Speech and Audio in the Northeast (SANE) Workshop, New York, NY, Oct. 22, 2015
- "Probabilistic Latent Component Sharing for the Separation of Non-Orthogonally Overlapping Sources," Speech and Audio in the Northeast (SANE) Workshop, New York, NY, Oct. 24, 2013
- Intel Science and Technology Center – Embedded Computing (ISTC-EC) Workday, Apr. 4-5, 2012

Internal Talks

- "Tackling Data Efficiency Issues for Personalized Speech Enhancement," ISE Colloquium Talk, Dept. of Intelligent Systems Engineering, Indiana University, Bloomington, IN, Apr. 2, 2021
- "Personalized Speech Enhancement: Test-Time Adaptation Using No or Few Private Data," AI Talk Series, Luddy School of Informatics and Computing, Indiana University, Bloomington, IN, Sep. 15, 2020
- Data Science Online Immersion Weekend, Indiana University, Bloomington, IN, Mar. 3, 2018
- "Efficient Machine Learning Models: Binarization and Network Compression," Intelligent & Interactive Systems Talk Series, School of Informatics and Computing, Indiana University, Bloomington, IN, Feb. 5, 2018
- Applied Research Institute Sensor Fusion Workshop, Indiana University, Bloomington, IN, Jun. 2, 2017
- "Bitwise Neural Networks," Indiana University Bloomington/Bielefeld University Cognitive Interaction Technology Workshop, Indiana University, Bloomington, IN, May 17, 2017
- IBM CIO's visit to IU, May 3, 2017
- "Bitwise Neural Networks," Department of Statistics Colloquium Series, Indiana University, Bloomington, IN, Oct. 31, 2016
- "Bitwise Neural Networks," Intelligent & Interactive Systems Talk Series, School of Informatics and Computing, Indiana University, Bloomington, IN, Oct. 31, 2016
- "To Make Machines Understand Sound," Worldwide Youth in Science and Engineering (WYSE) Summer Camp: Discover Engineering, Urbana, IL, Jun. 27, 2016
- "Bitwise Neural Networks," Coordinated Science Laboratory Student Conference, Urbana, Feb. 18-19, 2016
- "Bitwise Neural Networks," Beckman Graduate Seminar, Urbana, IL, Oct. 14, 2015
- Department of Electrical and Computer Engineering, UIUC (with visitors from Sony, Japan), May 10, 2012

10. SELECTED PATENTS

Named in more than 60 patent applications as an inventor. Some selected ones are:

- "Recurrent multimodal attention system based on expert gated networks," US Patent App. 16/417,554
- "Audio Signal Encoding Method and Device, and Audio Signal Decoding Method and Device," US Patent App. 16/541,959
- "Audio signal encoding method and apparatus and audio signal decoding method and apparatus using psychoacoustic-based weighted error function," US Patent App. 16/122,708
- "Irregular Pattern Identification Using Landmark Based Convolution," US Patent No. 10,002,622, 2018
- "Irregularity detection in music," US Patent No. 9,734,844, 2017
- "Automatic detection of dense ornamentation in music," US Patent No. 9,514,722, 2016
- "Pattern Matching of Sound Data Using Hashing," US Patent No. 9,449,085, 2016
- "Multichannel Sound Source Identification and Localization," US Patent No. 9,351,093, 2016
- "Sound Data Identification," US Patent No. 9,215,539, 2015.
- "Method and System for Separating Music Sound Source Using Time and Frequency Characteristics," US Patent No. 8,563,842, 2013
- "Method and System for Separating Music Sound Source," US Patent No. 8,340,943, 2012
- "Method and system for separating musical sound source without using sound source database," US Patent No. 8,080,724, 2011