

# Bongjun Kim

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| <b>EDUCATION</b>           | <b>Ph.D. candidate in Computer Science</b> 2013 – present<br>Interactive Audio Lab (Advisor: Bryan Pardo)<br>Northwestern University, Evanston, IL, USA  |
|                            | <b>M.S. in Culture Technology</b> 2012<br>Audio and Interactive Media Lab (Advisor: Woon Seung Yeo)<br>Korea Advanced Institute of Science and Technology (KAIST), Korea   |
|                            | <b>M.S. in Industrial Engineering</b> 2009<br>Industrial Informatics Lab (Advisor: Kiejin Park)<br>Ajou University, Suwon, Korea   |
|                            | <b>B.S. in Industrial and Information System Engineering</b> 2007<br>Ajou University, Suwon, Korea<br>(Study Abroad, Lulea University of Technology, Lulea, Sweden) Aug 2006 – Dec 2006  |
| <b>RESEARCH INTEREST</b>   | <b>Machine Learning</b> - interactive machine learning, deep learning, active learning<br><b>Audio Signal Processing</b> - sound event recognition, audio/music information retrieval<br><b>Human Computer Interaction</b> - a human-in-the-loop interface, digital musical instrument   |
| <b>RESEARCH EXPERIENCE</b> | <b>Research Assistant</b>   Northwestern University, IL, USA Sep 2013 – present <ul style="list-style-type: none"><li>▪ Audio search by vocal imitation using deep learning (Dec 2016 – present)</li><li>▪ Interactive sound event detection and annotation (Sep 2015 – present)</li><li>▪ Speeding learning of personalized audio equalization (Sep 2013 – Jun 2015)</li></ul> <b>Research Intern</b>   Bosch, CA, USA Jun 2018 – Aug 2018 <ul style="list-style-type: none"><li>▪ Weakly labeled audio event classification</li></ul> <b>Research Intern</b>   Gracenote, CA, USA Jun 2017 – Sep 2017 <ul style="list-style-type: none"><li>▪ Audio compression identification</li></ul> <b>Research Assistant</b>   KAIST, Korea Sep 2010 – Aug 2012 <ul style="list-style-type: none"><li>▪ Mobile media as a musical instrument</li></ul> |
| <b>TEACHING EXPERIENCE</b> | <b>Teaching Assistant</b> Fall quarters, 2014-2017<br>EECS-349 Machine Learning<br>Northwestern University, IL, USA  |
|                            | <b>Teaching Assistant</b> Fall, 2012<br>GCT-633 Audio and Multimedia Programming<br>KAIST, Korea   |

## PUBLICATIONS

- Bongjun Kim, Madhav Ghei, Bryan Pardo, and Zhiyao Duan, "Vocal Imitation Set: a dataset of vocally imitated sound events using the AudioSet ontology," Proceedings of the Detection and Classification of Acoustic Scenes and Events 2018 Workshop (DCASE2018), Surrey, UK, Nov. 2018.
- Bongjun Kim and Zafar Rafii, "Lossy Audio Compression Identification," European Signal Processing Conference (EUSIPCO), Rome, Italy, Sept. 2018.
- Bongjun Kim and Bryan Pardo, "A Human-in-the-loop System for Sound Event Detection and Annotation," ACM Transaction on Interactive Intelligent System (TiiS), Vol. 8, Issue 2, Article 13, June 2018.
- Bongjun Kim, "Leveraging User Input and Feedback for Interactive Sound Event Detection and Annotation," Student Consortium, ACM International Conference on Intelligent User Interfaces (IUI) 2018.
- Bongjun Kim and Bryan Pardo, "I-SED: an Interactive Sound Event Detector," ACM International Conference on Intelligent User Interfaces (IUI), Limassol, Cyprus, Mar. 2017
- Bongjun Kim and Bryan Pardo, "Interface Design for Interactive Sound Event Detection," Workshop on Awareness Interface and Interaction (AWARE) at the ACM International Conference on Intelligent User Interface (IUI), Limassol, Cyprus, Mar. 2017
- Bongjun Kim and Bryan Pardo, "Speeding Learning of Personalized Audio Equalization," International Conference on Machine Learning and Applications (ICMLA), Detroit, USA, Dec. 2014
- Bongjun Kim and Bryan Pardo, "Adapting Collaborative Filtering to Personalized Audio Production," AAAI Conference on Human Computation and Crowdsourcing (HCOMP), Pittsburgh, USA, Oct. 2014
- Bongjun Kim and Woon Seung Yeo, "Probabilistic Prediction of Rhythmic Characteristics in Markov Chain-based Melodic Sequences," International Computer Music Conference (ICMC) Aug. 2013
- Seunghun Kim, Bongjun Kim, and Woon Seung Yeo, "IAMHear: A Tabletop Interface with Smart Mobile Devices using Acoustic Location," Conference on Human Factors in Computing Systems (CHI) works in progress, Apr. 2013
- Bongjun Kim and Woon Seung Yeo, "Interactive Mobile Music Performance with Digital Compass," In Proceedings of the International Conference on New Interfaces for Musical Expression (NIME), Ann Arbor, USA, 2012.
- Minkoo Kang, Kiejn Park, and Bongjun Kim, "A Scheduling Alogorithm for Reducing FlexRay Message Response Time using Empty Minislots in Dynamic Segment," Digest of Technical Papers, International Conference on Consumer Electronics (ICCE), USA, 2010.
- Minkoo Kang, Kiejn Park, and Bongjun Kim, "A Static Message Scheduling Algorithm for Reducing FlexRay Network Utilization," IEEE International Symposium on Industrial Electronics, pp. 1287-1291, Seoul, Korea, 2009.
- Bongjun Kim and Kiejn Park, "Probabilistic Delay Model of Dynamic Message Frame in FlexRay Protocol," IEEE Transaction on Consumer Electronics, Vol. 55, Issue 1, pp. 77-82, Feb. 2009.
- Bumjoo Park, Kiejn Park, and Bongjun Kim, "A Performance Isolation Mechanism Based on Fuzzy Technique for Web Server Loading Balancing," The Institute of Electronics, Information and Communication Engineers Transactions on Communications, Vol.E92-B, No.4, pp. 1086-1093, Apr. 2009.
- Bongjun Kim and Kiejn Park, "Analysis of Frame Delay Probability in the FlexRay Dynamic Segment," The 6th IEEE International Conference on Industrial Informatics, pp. 1519-1522, Daejeon, Korea, 2008.
- Minkoo Kang, Kiejn Park, and Bongjun Kim, "PDO Packing Mechanism for Minimizing CANopen Network Utilization," The 34th Annual Conference of the IEEE Industrial Electronics Society, pp.1516-1519, Nov. 2008.
- Minkoo Kang, Kiejn Park, and Bongjun Kim, "Determining the Size of a Static Segment and Analyzing the Utilization of In-vehicle FlexRay Network," Third International Conference on Convergence and Hybrid Information Technology, Vol. 2, pp.50-53, Nov. 2008.

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|---|---|---------------------|
| <b>ACADEMIC AWARDS</b>  | <b>The NSF Travel Grant</b>   | 2018                |
|   | ACM International Conference on Intelligent User Interfaces (IUI) 2018                          |                     |
|   | <b>The NSF Travel Grant</b>   | 2017                |
|   | ACM International Conference on Intelligent User Interfaces (IUI) 2017                          |                     |
|   | <b>Segal Design Cluster Fellowship</b>  | 2015 – 2016         |
|   | Northwestern University, IL, USA  |                     |
|   | <b>Outstanding Teaching Assistant Award</b>   | 2012                |
|   | GCT633 Audio and Multimedia Programming   |                     |
|   | Korea Advanced Institute of Science and Technology (KAIST), Korea                               |                     |
|   | <b>Best Presentation and Paper Award</b>  | 2008                |
|   | IEEE International Conference on Industrial Informatics   |                     |
| <b>TALKS</b>  | “Interactive Intelligent user interfaces for Music and Audio”                                   | Mar 2018            |
|   | HCI@KAIST Seminars, KAIST, Korea  |                     |
|   | “Interactive Intelligent user interfaces for Music and Audio”                                   | Mar 2018            |
|   | Music and Audio Computing Lab., Culture Technology, KAIST, Korea                                |                     |
|   | “Interactive Intelligent user interfaces for Music and Audio”                                   | Mar 2018            |
|   | Ewha Arts & Science Institute, Ewha Womans University, Korea.                                   |                     |
|   | “A Human-in-the-loop System for Sound Event Detection and Annotation”                           | Mar 2018            |
|   | Haii:Human-AI-Interaction, inc., Yonsei University, Korea                                       |                     |
| “I-SED: an Interactive Sound Event Detector”                              | Jun 2017  |                     |
| Midwest Music and Audio Day, Evanston, IL, USA                            |   |                     |
| “I-SED: an Interactive Sound Event Detector”                              | Feb 2017  |                     |
| Simons Institute Workshop on Interactive Learning, Berkeley, CA, USA      |   |                     |
| “I-SED: an Interactive Sound Event Detector”                              | Feb 2017  |                     |
| Gracenote, Emeryville, CA, USA  |   |                     |
| <b>PROFESSIONAL EXPERIENCE</b>  | <b>Research Engineer</b>  | Jul 2009 – Jul 2010 |
|   | Research process innovation and product lifecycle management<br>Doosan Infracore Co. Ltd, Korea |                     |
| <b>EXTERNAL SERVICES</b>  | <b>Journal Reviewer</b>   |                     |
|   | IEEE Signal Processing Magazine   | 2018                |
|   | <b>Conference Reviewer</b>  |                     |
|   | ACM Multimedia Conference   | 2016                |
|   | IEEE International Conference on Acoustics, Speech, and Signal Processing                       | 2015 – 2016         |
|   | International Conference on New Interfaces for Musical Expression                               | 2013 – 2017         |
|   | IEEE Workshop on Applications of Signal Processing to Audio and Acoustics                       | 2015                |
|   | <b>Student Volunteer for Conferences</b>  |                     |
| ACM International Conference on Intelligent User Interfaces (IUI), Cyprus | 2017  |                     |
| International Conference on Design Computing and Cognition, USA           | 2016  |                     |

**Conference Staff: Administration**

2013

International Conference on New Interfaces for Musical Expression (NIME), Korea

**PERFORMANCE  
AND EXHIBITION**

**Mobile music performance: Where Are You Standing?**

May 2012

International Conference on New Interfaces for Musical Expression (NIME), Ann Arbor, USA

**Interactive sound art installation: Turning Into Sound**

Jan 2012

Daejoen Children Art Gallery, Daejeon, Korea

**Mobile music performance: ADC Project- Don't Imagine**

Aug 2011

Arco Art Theater, Seoul, Korea

**Mobile music performance: Where Are You Standing?**

Jun 2011

Hyundai Card / Capital Inc., Seoul, Korea

**PROGRAMMING  
AND SOFTWARE  
SKILLS**

- Python, Matlab, Javascript, Processing
- Max/MSP, Pure Data
- Music production tools: Logic Pro