

# Kahyun Choi

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## Research Interests

### Music text analysis and natural language processing

- Computational song lyrics analysis
- Web user opinion mining
- Topic classification from song lyrics
- Big text corpus analysis

### Machine learning

- Probabilistic topic modeling
- Classification systems

### Human-centered systems and metadata

- Cross cultural analysis of music genres and moods
- Crowdsourced music annotation
- User-centered user experience evaluation

### Audio music information retrieval

- Audio music signal processing
- Automatic music mood classification
- Evaluations of music information retrieval systems

### Informetrics study

- Social network analysis on co-authorship networks

### Digital library

- Music digital library
- Digital library building frameworks

## Education

### Ph.D. (currently pursuing) University of Illinois at Urbana-Champaign

- School of Information Sciences
- Proposed dissertation: *Computational Lyricology: Quantitative Approaches to Understanding Song Lyrics and Their Interpretations*
- Committee: J. Stephen Downie (advisor), Michael Twidale, Ted Underwood, Sally Jo Cunningham

### M.S. (2010) Korea Advanced Institute of Science and Technology (KAIST), Daejeon, Korea

- Digital Media Program
- Thesis: *Performance Improvement of Music Mood Classification Using Hyper Music Features*
- Advisor: Minsoo Hahn

### Honors B.E. (2005) Ajou University, Suwon, Korea

- Information and Computer Engineering

### Exchange student (fall 2004) University of Illinois at Chicago

- Department of Computer Science

## Work Experience

### Co-Instructor Aug. 2016 - Dec. 2016

- School of Information Science, University of Illinois at Urbana-Champaign
- Digital Libraries (LIS560LE)

### Research Assistant Aug. 2011 - Aug. 2016

- School of Information Science, University of Illinois at Urbana-Champaign

- Projects: [Music Information Retrieval Evaluation eXchange \(MIREX\)](#), K-Pop Mood/Genre Annotation, [HathiTrust Research Center \(HTRC\)](#)

**Teaching Assistant** 2013 - 2017

- School of Information Science, University of Illinois at Urbana-Champaign
- Digital Libraries (LIS560LE)

**Software Developer** Jan. 2009 - Jun. 2011

- [Naver Corp.](#), Seongnam, Korea
- Member System Development Team

**Software Developer Intern** Jun. 2007 - Jul. 2007

- [Postvisual](#), Seoul, Korea

## Awards, Honors and Scholarships

**Rayward Fellowship and Provost Match Fellowship**

- School of Information Sciences, University of Illinois at Urbana-Champaign
- Tuition waiver and stipend from summer 2017 to spring 2018

**Women in Music Information Retrieval (WiMIR) Award**

- ISMIR, 2016 (travel grant)

**Merit based university scholarships for four semesters**

- Department of Information and Computer Engineering, Ajou Univeristy, Suwon, Republic of Korea
- Spring 2004, fall 2003, spring 2002, fall 2001

**Graduated with honors**

- Department of Information and Computer Engineering, Ajou Univeristy, Suwon, Republic of Korea

## Publications

**Journal Articles**

1. Xiao Hu, *Kahyun Choi*, J. Stephen Downie, "[A Framework for Evaluating Multimodal Music Mood Classification](#)", Journal of the Association for Information Science and Technology, Vol. 68, pp. 273-285, 2015
2. Xiao Hu, Jin Ha Lee, David Bainbridge, *Kahyun Choi*, Peter Organisciak, and J. Stephen Downie, "[The MIREX Grand Challenge: a framework of holistic user experience evaluation in music information retrieval](#)", Journal of the Association for Information Science and Technology, Vol. 68, pp. 97-112, 2016

**Conference Proceedings**

3. Anders Friberg, Ragnar Schön, Anders Elowsson, *Kahyun Choi*, and J. Stephen Downie, "[Cross-cultural aspects of perceptual features in K-Pop: A pilot study comparing Chinese and Swedish listeners](#)," in Proceedings of the 43rd International Computer Music Conference, (ICMC), 2017
4. Xiao Hu, *Kahyun Choi*, Yun Hao, Sally Jo Cunningham, Jin Ha Lee, Audrey Laplante, David Bainbridge, and J. Stephen Downie, "[Exploring the Music Library Association Mailing List: A Text Mining Approach](#)", in Proceedings of the 18th International Society for Music Information Retrieval Conference, (ISMIR), 2017
5. *Kahyun Choi*, Jin Ha Lee, Xiao Hu, and J. Stephen Downie, "[Music Subject Classification Based on Lyrics and User Interpretations](#)", in Proceedings of the American Society for Information Science and Technology (ASIS&T), 2016
6. Xiao Hu, *Kahyun Choi*, Jin Ha Lee, Audrey Laplante, Yun Hao, Sally Jo Cunningham and J. Stephen Downie, "[WiMIR: An Informetric Study on Women Authors in ISMIR](#)", in Proceedings of the 17th International Society for Music Information Retrieval Conference, (ISMIR), 2016

7. Jin Ha Lee, Xiao Hu, *Kahyun Choi*, and J. Stephen Downie, "[MIREX Grand Challenge 2014 on User Experience: Qualitative analysis of user feedback](#)", in Proceedings of the International Society for Music Information Retrieval Conference, (ISMIR), 2015
8. *Kahyun Choi*, Jin Ha Lee, Craig Willis, J. Stephen Downie, "[Topic Modeling Users' Interpretations of Songs to Inform Subject Access in Music Digital Libraries](#)", In Proceedings of the IEEE/ACM Joint Conference in Digital Libraries (JCDL), 2015
9. J. Stephen Downie, Xiao Hu, Jin Ha Lee, *Kahyun Choi*, Yun Hao, and Sally Jo. Cunningham, "[Ten Years of MIREX \(Music Information Retrieval Evaluation eXchange\): Reflections, Challenges and Opportunities](#)", in Proceedings of the International Society for Music Information Retrieval Conference, (ISMIR), 2014
10. Xiao Hu, Jin Ha Lee, *Kahyun Choi*, and J. Stephen Downie, "[A Cross-Cultural Study on the Mood of K-POP Songs](#)", in Proceedings of the International Society for Music Information Retrieval Conference, (ISMIR), 2014
11. *Kahyun Choi*, Jin Ha Lee, and J. Stephen Downie, "[What is this song about anyway?: Automatic classification of subject using user interpretations and lyrics](#)", In Proceedings of the IEEE/ACM Joint Conference in Digital Libraries (JCDL), 2014
12. Jin Ha Lee, *Kahyun Choi*, Xiao Hu, and J. Stephen Downie, "[K-Pop Genres: A Cross Cultural Exploration](#)", in Proceedings of the International Society for Music Information Retrieval Conference, (ISMIR), 2013.

#### **Workshop Papers**

13. Yun Hao, *Kahyun Choi*, and J. Stephen Downie, "[Exploring J-DISC: Some Preliminary Analyses](#)", in Proceedings of the 3rd International Digital Libraries for Musicology workshop (DLfM), 2016

#### **Doctoral Colloquia**

14. "Music Thumbnailing," 2016 Annual Meeting of the Association for Information Science and Technology (ASIS&T) Doctoral Colloquium, Copenhagen, Denmark, Oct. 18, 2016 (Travel grant)
15. "From Lyrics to Their Interpretations: Automated Reading between the Lines," the IEEE/ACM Joint Conference in Digital Libraries (JCDL) Doctoral Consortium, 2015 (Travel grant)

## **Presentations**

#### **Invited Talks**

- "Automatic Music Subject Classification and a Cross-Cultural Exploration of K-Pop Genre," Shazam, Menlo Park, CA, Aug. 14, 2014.
- "A Cross-Cultural Study on the Mood and Genre of Korean Pop Songs," Pandora Radio, Oakland, CA, Jun. 19, 2014.
- "A Cross-cultural Exploration of K-Pop Moods and Genres," KTH Royal Institute of Technology, Sweden, May 3, 2014 - May 9, 2014.
- Guest lectures about Information Retrieval, Digital Libraries (LIS560LE), Fall 2014, Spring 2015, Fall 2015, and Spring 2016.

#### **Posters**

- "Topic Modeling Users' Interpretations of Songs to Inform Subject Access in Music Digital Libraries," GSLIS Research Showcase 2015
- "The Impact of Music Genre on Music Similarity: A Qualitative Exploration," GSLIS Research Showcase 2015
- "Exploring Music Subject Classification Based on User Interpretations of Music," Midwest Music Information Retrieval Gathering (MMIRG), Evanston, IL, Jun. 14, 2014.
- "K-Pop Genres: A Cross Cultural Exploration," GSLIS Research Showcase 2014
- "Exploiting Structural Data for Music Exploration," GSLIS Research Showcase 2013
- "Music Mood Tag Prediction with Dimension Reduced Tag Space," GSLIS Research Showcase 2013

## Skills

- Programming languages: MATLAB, Unix shell scripting, Python, JavaScript, R, Java, C, PHP, C with PIC
- Machine learning tools: scikit-learn, Mallet, Weka
- Digital library building tools: Omeka, Greenstone
- Others: Linux, NodeXL, Dedoose, Amazon MTurk

## Professional Activities

### Research Community Work

- The Music Information Retrieval Evaluation eXchange (MIREX), Evaluation Committee member, (Aug. 2011 - Aug. 2013)
- The Music Information Retrieval Evaluation eXchange (MIREX), Evaluation Committee leader, (Aug. 2014 - Aug. 2016)

### As a reviewer of journals and conferences

- The International Society for Music Information Retrieval Conference (ISMIR)
- ACM Transactions on Intelligent Systems and Technology (TIST)
- The American Society for Information Science and Technology (ASIS&T)
- International Journal on Digital Libraries (IJDL)

### Memberships

- ASIS&T: Student member