

# Kahyun Choi

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## Positions Held

**Assistant Professor** Jan. 2019 - present

- Department of Information and Library Science
- Data Science Program
- Luddy School of Informatics, Computing and Engineering
- Indiana University Bloomington

**Instructor** Fall 2016

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

**Research and Teaching Assistant** Fall 2011 - Fall 2018

- 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 \(HTRC\)](#)
- Courses: "Digital Libraries" (LIS560LE), "Machine Learning Team Projects" (IS590ML)

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

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

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

- [Postvisual](#), Seoul, Korea

## Education

**Ph.D. (2018) University of Illinois at Urbana-Champaign**

- School of Information Sciences
- 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

## Teaching

**Teaching Courses**

- "Music Data Mining" (ILS-Z 604, ILS IU), Spring 2020
- "Database Design" (ILS-Z 511, ILS IU), Fall 2019
- "Database Design" (ILS-Z 511, ILS IU), Spring 2019
- "Digital Libraries" (LIS 560 LE, School of Information Sciences, UIUC), Fall 2016

**Teaching Assistant**

- "Machine Learning Team Projects" (IS 590 ML, School of Information Sciences, UIUC), Fall 2018
- "Digital Libraries" (LIS560LE), School of Information Sciences, UIUC, Spring 2017, Fall 2015, Spring 2015, Fall 2014, Spring 2014, Fall 2013, and Spring 2013

## Publications

### Peer Reviewed Publications

1. *Kahyun Choi* and J. Stephen Downie, "[A Trend Analysis on Concreteness of Popular Song Lyrics](#)," in Proceedings of the 6th International Digital Libraries for Musicology workshop (DLfM), 2019.
2. *Kahyun Choi* and J. Stephen Downie, "[Exploratory investigation of word embedding in song lyric topic classification: promising preliminary results](#)," In Proceedings of the IEEE/ACM Joint Conference in Digital Libraries (JCDL), 2018.
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. 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
6. *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
7. 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
8. 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
9. 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
10. 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
11. *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
12. 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
13. 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

14. *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
15. 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.

#### **Doctoral Colloquia**

16. "Music Thumbnailing," 2016 Annual Meeting of the Association for Information Science and Technology (ASIS&T) Doctoral Colloquium, Copenhagen, Denmark, Oct. 18, 2016 (Travel grant)
17. "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

## **Advising**

#### **PhD Dissertation Committee Member**

- Zheng Gao (ILS at IU)

## **Professional Activities**

#### **Research Community Work**

- Midwest Music and Audio Day, Bloomington, IN, Organizing Committee (June 27, 2019)
- The Music Information Retrieval Evaluation eXchange (MIREX), Evaluation Committee leader, (Aug. 2014 - Aug. 2016)
- The Music Information Retrieval Evaluation eXchange (MIREX), Evaluation Committee member, (Aug. 2011 - Aug. 2013)

#### **As a reviewer of journals and conferences**

- Transactions of the International Society for Music Information Retrieval (TISMIR)
- The International Society for Music Information Retrieval Conference (ISMIR)

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

## Skills

- Programming languages: Python, MATLAB, Unix shell scripting, JavaScript, R, Java, C, PHP, C with PIC
- Database: MySQL, MongoDB, Neo4j
- Machine learning tools: scikit-learn, Keras, Mallet, Weka
- Digital library building tools: Omeka, Greenstone
- Others: Linux, NodeXL, Dedoose, Amazon MTurk

## 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

## 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