

# 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
- Luddy Fellow 2021-2022

**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

## 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**

- "Database Design" (ILS-Z 511, ILS IU), Spring 2022, Fall 2021, Spring 2021, Fall 2020, Fall 2019, Spring 2019
- "Music Data Mining" (ILS-Z 604, ILS IU), Fall 2022, Spring 2020
- "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

## Grants

### Awarded Grants

1. ["Unbiased AI for Poetry Analysis: Toward Equitable and Diverse Digital Libraries,"](#) Institute of Museum and Library Services, Early Career Research Development project of Laura Bush 21st Century Librarian Program, Federal, \$420,819, Aug. 2022 - Jul. 2025, Principal Investigator
2. ["Computational Poetry Analysis: AI for Literature,"](#) Luddy Faculty Fellowship, Internal, \$25,000, Nov. 2021 - Oct. 2022, Principal Investigator
3. ["AI & Co-design in public libraries: Empowering underserved youth to cultivate symbiotic relationships between Artificial Intelligence \(AI\) and their communities,"](#) Institute of Museum and Library Services, National Leadership Grants, Federal, (\$249,999 in total, my portion is about \$97,741), Aug. 2021 - Jul. 2023, Co-Principal Investigator (PI: Hee Rin Lee)

## Publications

### Peer Reviewed Publications

1. *Kahyun Choi*, "Computational Poetry Collection Analysis via Context-Dependent Language Models," ASIST AI workshop, 2022.
2. Hee Rin Lee, *Kahyun Choi*, Selin Akgun, Pooja Malvi, Ji Youn Shin, and Meredith Dedema, "AI & Co-design in public libraries: Empowering underserved youth to cultivate symbiotic relationships between Artificial Intelligence (AI) and their communities," ASIST AI workshop, 2022. (Best Presentation Award)
3. *Kahyun Choi*, ["Bimodal Music Subject Classification via Context-Dependent Language Model,"](#) in Proceedings of the 16th iConference (iConference), 2021.
4. *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.
5. *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.
6. 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
7. 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
8. 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 (JASIST), Vol. 68, pp. 97-112, 2016
9. *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
10. 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
11. 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
  12. Xiao Hu, *Kahyun Choi*, J. Stephen Downie, "[A Framework for Evaluating Multimodal Music Mood Classification](#)", Journal of the Association for Information Science and Technology (JASIST), Vol. 68, pp. 273-285, 2015
  13. 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
  14. *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
  15. 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
  16. 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
  17. *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
  18. 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**

19. "Music Thumbnailing," 2016 Annual Meeting of the Association for Information Science and Technology (ASIS&T) Doctoral Colloquium, Copenhagen, Denmark, Oct. 18, 2016 (Travel grant)
20. "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**

- "Computational Lyricology", [The Georgia Tech Center for Music Technology Seminar](#), Georgia Tech, September 12, 2022
- "Music Trend Analysis," [IU JSOM Music and Mind Lab](#), Bloomington, May 2, 2022
- "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 PhD at IU), 2020

### **PhD Qualifying Exam Committee Member**

- Pei-Ying Chen (ILS PhD at IU), 2021

### **Women in Music Information Retrieval (WiMIR) Mentor**

- Eunjin Choi (PhD at Graduate School of Culture Technology at KAIST), Spring 2022

### **Emerging Scholars Research Experience for Undergraduate Women Mentor**

- Alexa Walquist (Undergraduate at Kelley School at IU), Fall 2022-Spring 2023

### **Independent Study and Research Assistantship Advising**

- Meredith Dedema (ILS PhD at IU), Summer 2022-Spring 2023

### **Research Assistantship Advising**

- Shruti Padole (CS MS at IU), Summer 2022-

## Professional Activities

### **Advisory Board**

- [Audiovisual Metadata Platform](#), Indiana University (IU) Libraries, Andrew W. Mellon Foundation, 2022

### **Research Community Work**

- The International Society for Music Information Retrieval Conference (ISMIR), Meta-Reviewer, 2022
- The International Society for Music Information Retrieval Conference (ISMIR), Volunteer Chair, 2021
- The International Society for Music Information Retrieval Conference (ISMIR), Meta-Reviewer, 2021
- The International Digital Libraries for Musicology workshop (DLfM), Session Chair, 2021
- The International Digital Libraries for Musicology workshop (DLfM), Program Committee, 2021
- The International Society for Music Information Retrieval Conference (ISMIR), Meta-Reviewer, 2020
- 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)

### **Internal Services at IU**

- Data Science Curriculum Committee (Data Science), 2020-present
- ILS Ph.D Committee, October 2019-present
- ILS Colloquium Committee, October 2019-present

### **Skills**

- Machine learning tools: PyTorch, scikit-learn, Keras, Mallet, Weka
- Programming languages: Python, MATLAB, Unix shell scripting, JavaScript, R, Java, C, PHP, C with PIC
- Database: MySQL, MongoDB, Neo4j
- 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