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

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

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

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