

# YUCONG JIANG

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## ACADEMIC APPOINTMENT

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**Assistant Professor of Computer Science**

*August 2020 —*

Department of Computer Science

University of Richmond, Virginia, USA

**Marie Skłodowska-Curie Visiting Fellow**

*July 2023—July 2024*

Department of Music Acoustics

University of Music and Performing Arts, Vienna, Austria

## EDUCATION

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**Indiana University**, Bloomington, Indiana, USA

Doctor of Philosophy in Computer Science

*July 2020*

Minor in Statistics

Dissertation: *Piano Score Following with Hidden Timbre or Tempo using Switching Kalman Filters*

Master of Science in Computer Science

*March 2016*

**Beijing University of Posts and Telecommunications**, Beijing, China

Bachelor of Science in Electrical Engineering

*June 2012*

Thesis: *Modeling and Classification of Music Occasions*

## RESEARCH INTERESTS

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Music informatics, digital humanities, applied AI, data mining, computational social science.

## PUBLICATIONS

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(\* indicates University of Richmond students)

Jiang, Y. (2023). Expert and Novice Evaluations of Piano Performances: Criteria for Computer-Aided Feedback. In *International Society for Music Information Retrieval (ISMIR)* (pp. 367-374).

Sales, C.\*, Wang, P.\*, & Jiang, Y. (2023). An Interactive Tool for Exploring Score-Aligned Performances: Opportunities for Enhanced Music Engagement. In *Audio Mostly* (pp. 30-33).

Jiang, Y., & Raphael, C. (2020). Score Following with Hidden Tempo Using a Switching State-space Model. In *International Society for Music Information Retrieval (ISMIR)* (pp. 693-699).

Jiang, Y., & Raphael, C. (2019). Piano Score-following by Tracking Note Evolution. In *Proc. Sound and Music Computing (SMC)* (pp. 394-400).

Jiang, Y., Ryan, F., Cartledge, D., & Raphael, C. (2019). Offline Score Alignment for Realistic Music Practice. In *Proc. Sound and Music Computing (SMC)* (pp. 387-393).

Jiang, Y., & Raphael, C. (2015). Instrument Identification in Optical Music Recognition. In *International Society for Music Information Retrieval (ISMIR)* (pp. 612-617).

## GRANTS AND FELLOWSHIPS

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**(PI)** NEH Digital Humanities Advancement Grant (DHAG), “Prototyping a Digital Tool for Computer-Assisted Annotation and Analysis of Music Performance,” Oct 2023–Sep 2025, \$74,973 **awarded**.

**(Fellowship)** European Commission, Marie Skłodowska-Curie Actions (MSCA) European Fellowship, 2023–’24. \$106,000 (€99,450) **awarded** (including research and indirect expenses).

**(Collaborator)** NEH Digital Humanities Advancement Grant (DHAG), “America’s Music Scenes in the Age of Social Media,” Sep 2021–Aug 2023, \$1,800 portion of \$47,357 **awarded**.

**(Fellowship)** University of Richmond A&S Faculty Research Summer Fellowship, Summer 2023, \$6,000 **awarded**.

**(Fellowship)** University of Richmond A&S Faculty Research Summer Fellowship, Summer 2022, \$6,000 **awarded**.

**(Fellowship)** University of Richmond A&S Faculty Research Summer Fellowship, Summer 2021, \$6,000 **awarded**.

**(Travel)** University of Richmond A&S Faculty Travel Grant, September 2023, \$2,000 **awarded**.

## CONFERENCE ACTIVITY

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International Society for Music Information Retrieval, November 2023. “Expert and Novice Evaluations of Piano Performances: Criteria for Computer-Aided Feedback.” (paper presentation)

Audio Mostly conference, August 2023. “An Interactive Tool for Exploring Score-Aligned Performances: Opportunities for Enhanced Music Engagement.” (paper presentation)

International Conference on Digital Libraries for Musicology, July 2022. “AI-Assisted Annotation and Analysis of Music Performance Through Audio-to-Score Alignment.” (poster presentation)

North East Music Information Special Interest Group, June 2022. “AI-Assisted Annotation and Analysis of Music Performance Through Audio-to-Score Alignment.” (poster presentation)

Digital Music Research Network, December 2021. “An Interactive Tool for Visualizing Musical Performance Subtleties.” (poster presentation)

International Society for Music Information Retrieval, November 2021. “Piano Precision: Visualizing Practice Subtleties of Piano Learners.” (prototype demo)

International Society for Music Information Retrieval, October 2020. “Score Following with Hidden Tempo Using a Switching State-space Model.” (paper presentation)

Midwest Music and Audio Day, June 2019. “Score Following of Piano by Modeling Latent Timbral Parameters.” (paper presentation)

Sound and Music Computing conference, May 2019. “Piano Score-Following by Tracking Note Evolution.” (paper presentation)

International Society for Music Information Retrieval, October 2015. “Instrument Identification in Optical Music Recognition.” (paper presentation)

## INVITED TALKS

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Centre for Digital Music, Queen Mary University of London, May 2022. “Visualizing Subtleties of Music Performance.”

Hope College, October 2019. “Data Mining, AI, and Music.”

## TEACHING

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### Assistant Professor at University of Richmond

- CMSC-150 Introduction to Computing (with Labs) Fa20, Sp21, Fa22
- CMSC-221 Data Structures (with Labs) Sp21, Fa21, Sp22, Sp23
- CMSC-395 Topic: Music Informatics (new course) Sp22, Sp23

### Instructor at Indiana University Bloomington

- CS-A290/590 Topic: Programming with R (new course) Su19

### Associate Instructor at Indiana University Bloomington

- CS-B365 Data Analysis and Mining Fa18, Sp19, Fa19, Sp20
- CS-B536 Advanced Operating Systems Fa14
- CS-A321 Computing Tools for Scientific Research Sp13
- CS-A201 Introduction to Programming Fa12, Fa13, Sp14, Sp15, Fa15

Nominated for the Computer Science *Associate Instructor of the Year* award for 2018-2019.

## MENTORING

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- Summer Research (5 students): Data Scraping and Visualization for Interdisciplinary Research Su22
- Directed Independent Study (1 student): Interactive Web Data Visualization Sp23
- Directed Independent Study (1 student): Music Programming and Analysis Sp23
- Directed Independent Study (2 students): Advanced Data Scraping and Analysis Fa22
- Directed Independent Study (4 students): Web Scraping and Data Visualization Sp22
- Directed Independent Study (2 students): Music Programming and Analysis Sp22

## PROFESSIONAL SERVICE

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### Internal (to University of Richmond)

- Computer Science Honors Coordinator, 2021-2023.
- Member, Data Science Advisory Board, 2022-2024.
- Member, search committee for a visiting assistant professor position in Computer Science, 2021.
- Member, search committee for three tenure-stream positions in Computer Science, 2022-2023.
- Member, Computer Science program's Self-Study with External Review committee, 2022-2023.
- Outreach speaker, Faculty Snapshot talks for URISE (University of Richmond Integrated Science Experience), 2021, 2022.

### External

- Referee, International Society for Music Information Retrieval conference, 2021, 2023.
- Referee, IEEE International Conference on Acoustics, Speech, and Signal Processing, 2019, 2022.
- Invited panelist, meeting with the Girls Who Code club at the Bryn Mawr School, 2021.
- Invited instructor, "Introduction to R" lecture in the research methods course for the *Research Experiences for Undergraduate Women* program at Indiana University, 2019.

## INDUSTRY EXPERIENCE

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### Google Inc., Los Angeles, California USA

Software Engineering Intern

May-August 2017

Team: Ads Exclusions

Topic: Site-level Aggregation on Ads Classification

- Collected and processed Ads data using Flume C++ (MapReduce).
- Analyzed ads sites data of the past two weeks using SQL and R.
- Did experiments on aggregating information of ads pages under the same site. It aimed to help improve [ads general category blocking](#) and [ads sensitive category blocking](#).

- Conducted human evaluations on aggregation. Suggested aggregation criteria according to the evaluation results.
- Delivered a presentation about this project for the Ads Signals department.

**Google Inc.**, Mountain View, California USA

*May-July 2016*

Software Engineering/Network Engineering Intern

Team: Corporate Networking

Topic: Outlier Detection on Corporate Network Data

- Developed an *outlier detection* tool in R. It was implemented as an extendable general framework.
- Included the sampling module and the evaluation for sampling module in the tool.
- Tested this tool by doing data analysis on corporate network data.
- Delivered a presentation about this project for the department.

## ACTIVITIES

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**Laptop Orchestra** Performed in Indiana University Laptop Ensemble, directed by Prof. John Gibson, Indiana University Jacobs School of Music. (Dec 8, 2016)

**Women in Computing** Attended the conference of Grace Hopper Celebration of Women in Computing (GHC), sponsored by School of Informatics, Computing and Engineering, Indiana University. (Oct 14-16, 2015)

## SKILLS

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C/C++, Java, Python, R, HTML/CSS/JavaScript, Matlab, SQL

## LANGUAGES

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Standard Chinese, English