

# HAICI YANG

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Audio Coding, Spatial Audio, Music Source Separation, Speech Enhancement

## EDUCATION

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- PhD** Indiana University Bloomington, IN. Aug. 2019 – Current  
Intelligent System Engineering  
Advised by Professor Minje Kim
- MS** Peking University Beijing, China Sep. 2017 – Jun. 2019  
Informatics  
Advised by Professor Jun Wang in KVision Digital Library Lab.
- BS** Beijing Normal University Beijing, China Sep. 2013 – Jun. 2017  
Information System; Minored in Psychology  
GPA 4.2/5; Graduated with Honor

## PUBLICATIONS

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### *Conference Papers*

[C-9] **Haici Yang**, Jiaqi Su, Minje Kim, and Zeyu Jin. "Genhancer: High-Fidelity Speech Enhancement via Generative Modeling on Discrete Codec Tokens ." *Interspeech*, 2024

[C-8] **Haici Yang**, Inseon Jang, and Minje Kim. "Generative De-Quantization for Neural Speech Codec via Latent Diffusion." *ICASSP 2024 - 2024 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, IEEE, 2024

[C-7] Inseon Jang, **Haici Yang**, and Minje Kim. "Personalized Neural Speech Codec." *ICASSP 2024 - 2024 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, IEEE, 2024

[C-6] **Haici Yang**, Wootae Lim and Minje Kim, "Neural Feature Predictor and Discriminative Residual Coding for Low-Bitrate Speech Coding," *ICASSP 2023 - 2023 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, Rhodes Island, Greece, 2023, pp. 1-5. IEEE, 2023

[C-5] **Haici Yang**, Sanna Wager, Spencer Russell, Mike Luo, Minje Kim, and Wontak Kim. "Upmixing via style transfer: a variational autoencoder for disentangling spatial images and musical content." In *ICASSP 2022-2022 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, pp. 426-430. IEEE, 2022.

[C-4] **Haici Yang**, Shivani Firodiya, Nicholas J. Bryan, and Minje Kim. "Don't Separate, Learn To Remix: End-To-End Neural Remixing With Joint Optimization." In *ICASSP 2022-2022 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, pp. 116-120. IEEE, 2022.

[C-3] **Haici Yang**, Kai Zhen, Seungkwon Beack, and Minje Kim. "Source-aware neural speech coding for noisy speech compression." In ICASSP 2021-2021 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), pp. 706-710. IEEE, 2021.

[C-2] Sunwoo Kim, **Haici Yang**, and Minje Kim. 2020, May. Boosted Locality Sensitive Hashing: Discriminative Binary Codes for Source Separation. In ICASSP 2020-2020 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP) (pp. 106-110). IEEE. 'Nomination of Best Student Paper Award'

[C-1] **Haici Yang**, Hongda Mao, Ruirui Li, Chelsea JT Ju, and Oguz Elibol. "Non-local convolutional neural networks (NLCNN) for speaker recognition." arXiv preprint arXiv:2011.03682 (2020).

### **Journal Papers**

[J-1] Börner K, et al. (2020) Mapping the co-evolution of artificial intelligence, robotics, and the internet of things over 20 years (1998-2017). PLoS ONE 15(12): e0242984. <https://doi.org/10.1371/journal.pone.0242984>

### **Domestic Publications (In Chinese)**

[JC-3] **Haici Yang**. "Network Extraction and Analysis on SongYuanXueAn -- Word Embedding Application on Chinese Traditional Text". Peking University. 2019

[JC-2] **Haici Yang**, Jun Wang. "Construction and Visualization of Knowledge Graph on Academic Relationships among People in Song Dynasty." Data Analysis and Knowledge Discovery, vol. 3, no. 6, 2019, pp. 109-116. (Demo: [kvlab.org/cbdb\\_kg](http://kvlab.org/cbdb_kg))

[JC-1] Jian Jin, **Haici Yang**. "A Topic Relevance Aware Model for Reviewer Recommendation", Digital Library Forum, vol. 4, 2017, pp. 47-55.

### **WORK EXPERIENCE**

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#### **Mitsubishi Electric Research Lab (MERL)**

June 2024 – Current

*Research Intern, Cambridge, MA*

- Supervisor: Gordon Wichern

#### **Indiana University**

Jan 2021 – Current

*Research Assistant, Bloomington, IN*

- Supervisor: Minje Kim
- Project 1: Source-aware neural codec targeting the mixture signal coding problem. Work published [C-3].
- Project 2: End-to-end music remixing model that jointly optimizes remixing and source separation tasks. Work published [C-4].
- Project 3: Low-latency predictive neural codec. Work published [C-6].
- Project 4: Generative neural audio codec. Work published [C-7, C-8]. Journal extension in progress.

#### **Adobe Research**

Jun 2023 – Dec 2023

*Research Intern. San Francisco, CA*

- Supervisor: Jiaqi Su, Zeyu Jin
- Project: Generative speech enhancement on discrete speech tokens. Work published [C-9].

**Microsoft – Microsoft Research Asia**

Nov 2022 – Mar 2023

*Research Intern. Beijing, China*

- Supervisor: Xiulian Peng
- Project: Speech coding.

**Amazon.com, Inc – Lab126**

Summer 2021

*Applied Scientist Intern. Cambridge, MA*

- Supervisor: Wontak Kim, Sanna Wager, Spencer Russell
- Project: Blind stereo-to-5-channel up-mixing involving spatial image and musical content disentanglement. Work published [C-5].

**Amazon.com, Inc - Alex Speech Team**

Summer 2020

*Applied Scientist Intern. Sunnyvale, CA*

- Supervisor: Oguz Elibol, Hongda Mao
- Project: An overview of the state-of-the-art speaker recognition model and exploring the application of Non-local Convolutional Neural Networks (NLCNN) in the speaker recognition problem. See [C-1]

**Cyberinfrastructure Network Science Center, Bloomington, IN**

Aug 2018 – Mar 2019

*Research Assistant*

- Supervisor: Katy Borner
- Project: Mapping the co-evolution of artificial intelligence, robotics, and the Internet of Things over 20 years through keyword detection, network analysis, and visualization. Work published [J-1]

**WWF China, Beijing China**

Summer 2018

*Analyst Intern*

- Website design and development for the Human Resource Team.

**Nielsen, Beijing China**

Summer 2016

*Analyst Assistant*

- Data-driven user study reports produced for the Telecom Team

**TEACHING EXPERIENCE**

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**Indiana University, Bloomington, IN**

Fall 2019

*Associated Instructor*

- ENGR-E533 Deep Learning System