

Yue Qiao

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Education

Princeton University M.A. & Ph.D., Mechanical and Aerospace Engineering Advisor: Edgar Choueiri	Princeton, NJ <i>Expected 2024</i>
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Penn State University Graduate program in Acoustics (Distance Education, non-degree seeking)	University Park, PA <i>2020</i>
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Peking University B.S., Physics Minor in Theory and History of Arts (Musicology oriented)	Beijing, China <i>2019</i>
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Hong Kong University of Science and Technology Exchange program at School of Science	Hong Kong SAR <i>2017</i>
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Research Experience

3-D Audio and Applied Acoustics (3D3A) Laboratory, Princeton University <i>Assistant in Research</i> , advisor: Edgar Choueiri	Princeton, NJ <i>2019-Present</i>
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- Working on personal sound zone reproduction for multiple listeners with head tracking.
- Participated in funded projects with Focal, Tesla, and Masimo on spatial audio reproduction and personal sound zones.

Reality Labs, Meta <i>Research Engineer Intern</i> , manager: Pablo F. Hoffmann	Sunnyvale, CA <i>May-Aug 2022</i>
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- Developed machine-learning-based models for spatial audio quality evaluation.

Speech and Hearing Research Center (SHRC), Peking University <i>Undergraduate Research Assistant</i> , advisor: Tianshu Qu	Beijing, China <i>2018 - 2019</i>
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- Worked on building a spherical microphone array for sound field recording and implementing its encoding and decoding system in higher-order Ambisonics.

Center for Computer Research in Music and Acoustics (CCRMA), Stanford University <i>Undergraduate Visiting Research Intern</i> , advisor: Fernando Lopez-Lezcano, Chris Chafe	Palo Alto, CA <i>Jul-Sep 2018</i>
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- Worked on interactive musical performance with spatial audio in higher-order Ambisonics and physical modeling of sound objects using Leap Motion for hand gesture control.

Skills and Interests

- **Programming:** MATLAB, Python, C++ (JUCE), Max/MSP, Plogue Bidule, SuperCollider, \LaTeX
- **Spatial Audio:** Personal Sound Zones, Ambisonics, Head-Tracked Rendering, Beamforming
- **Other Audio-related:** Acoustic Simulation & Measurement, Perceptual Listening Test Design, VST Plugin Development, Psychoacoustics, Room Acoustics, Deep Learning (Tensorflow/Pytorch)
- **Music:** Piano, Guitar, Electronic Music, Music Production, Binaural Recording
- **Research Interests:** Personal Sound Zones, Real-time Audio DSP with Deep Learning, VR/AR Audio

Selected Publications

(Accepted) **Yue Qiao** and Edgar Choueiri. "Neural modeling and interpolation of binaural room impulse responses with head tracking", in *Audio Engineering Society Convention 155*. New York, USA, 2023.

(In Press) **Yue Qiao** and Edgar Choueiri. "The Effects of Individualized Binaural Room Transfer Functions for Personal Sound Zones", *Journal of the Audio Engineering Society*, 2023.

Yue Qiao, Léo Guadagnin, and Edgar Choueiri. "Isolation performance metrics for personal sound zone reproduction systems", *JASA Express Letters*, 2022.

Yue Qiao, Nick Zacharov, and Pablo F. Hoffmann. "Prediction of Timbral and Spatial Audio Quality with Independent Auditory Feature Mapping", in *Audio Engineering Society Convention 153*. Online, 2022.

Mengfan Zhang, **Yue Qiao**, Xihong Wu, and Tianshu Qu. "Distance-Dependent Modeling of Head-Related Transfer Functions." in *IEEE International Conference on Acoustics, Speech and Signal Processing*. Brighton, UK, 2019.

Tianshu Qu, Zhichao Huang, **Yue Qiao**, and Xihong Wu. "Matching Projection Decoding Method for Ambisonics System", in *IEEE International Conference on Acoustics, Speech and Signal Processing*. Calgary, Alberta, Canada, 2018.

Selected Awards and Honors

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| • AES Educational Foundation Scholarship Recognition | <i>Aug 2023</i> |
| • Best Student Paper Award at the 152nd AES Convention | <i>May 2022</i> |
| • Weiming Physics Students Fellowship , Peking University | <i>2018</i> |
| • Award for Scientific Research , Peking University | <i>2017</i> |
| • Bronze Medal in the 31 st Chinese Physics Olympiad | <i>2014</i> |
| • 1st Prize in Chinese Mathematics Olympiad, Gansu Province | <i>2014</i> |