

Zhiyu (Alex) Zhang

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EDUCATION

University of Washington

Ph.D. in Information Science

Advisors: Profs. Katie Davis and Jin Ha Lee.

Seattle, WA

Sep 2025 – Present

University of Michigan

B.S. in Computer Science and B.A. in Music (Dual Degree)

B.S. with High Distinction; B.A. with Highest Honors. Transferred from Wake Forest University.

Ann Arbor, MI

Jan 2022 – May 2025

PUBLICATIONS

Conference Papers

2. Seiders, L., **Zhang, A.**, Chinthamaduka, A., Zhu, J., & Granzow, J. (2026). Deep Drawing: Performance surface sound source localization. *Proceedings of the International Conference on New Interfaces for Musical Expression (NIME 2026)*.
1. Zhu, J., Ackley, E., **Zhang, Z.**, & Granzow, J. (2025). Deep Drawing: Spectra and sound-source localization. *Proceedings of the International Computer Music Conference (ICMC 2025)*.

Journal Articles

1. Carter, S., & **Zhang, Z.** (2024). Father Amiot's report of the Kangxi Emperor's "improvements" to ritual instruments in eighteenth-century China. *Journal of the American Musical Instrument Society*, 50, 97–130.

Presentations and Performances

5. **Zhang, Z.** (2025, June 4–7). *Rethinking musical instrument classification: Accounting for AI semantic interfaces* [Paper presentation]. The 2025 American Musical Instrument Society Annual Meeting, Savannah, GA, United States.
4. Ruthmann, A., **Zhang, Z.**, & Wang, Z. (2025, March 26–28). *Web-based educational spatial audio system and interfaces for Boulez's Dialogue de l'ombre double* [Demo presentation]. IRCAM Forum Workshops 2025, Paris, France.
3. Zhu, J., Ackley, E., **Zhang, Z.**, & Granzow, J. (2024, September 9–11). *Deep Drawing: An intermedia AI co-performer* [Performance]. The 5th Conference on AI Music Creativity, Oxford, UK.
2. Carter, S., & **Zhang, Z.** (2024, May 15–18). *Music, instruments, and dance in tenth-century Shu: Echoes of the great Tang* [Poster presentation]. The 2024 American Musical Instrument Society Annual Meeting, Phoenix, AZ, United States.
1. Carter, S., & **Zhang, Z.** (2023, May 31–June 3). *Kangxi, Father Amiot, and "improvements" to ritual instruments in eighteenth-century China* [Paper presentation]. The 2023 American Musical Instrument Society Annual Meeting, Memphis, TN, United States.

Translations

1. Ljunggren, C. (2018). *The choral world: A chronological, historical, and geographical overview* (Y. Wang & **Z. Zhang**, Trans.). Shanghai Conservatory of Music Press (ISBN: 978-7556601714).

GRANTS, AWARDS & HONORS

Gilbert Whitaker Fund for the Improvement of Teaching, Center for Research on Learning and Teaching, University of Michigan: 2026 – 2027 (\$10,000 total award). Role: Research Assistant, with Prof. Julie Zhu (PI).

William E. Gribbon Memorial Award for Student Travel, American Musical Instrument Society: 2023 (\$2,600).

James B. Angell Scholar and University Honors, University of Michigan: Winter 2022 – Winter 2025 (6 semesters).

Dean's List, Wake Forest University: Fall 2020 – Fall 2021 (3 semesters).

RESEARCH EXPERIENCE

UW Center for Digital Youth and GAMER Group Seattle, WA
Faculty Advisors: Profs. Katie Davis and Jin Ha Lee Sep 2025 – Present

- Pursuing doctoral research across multiple projects at the intersection of technology, music, and learning.
- Leading participatory design sessions with children and teenagers in the Greater Seattle Area through KidsTeam UW (ages 7–11), foundry10 (ages 11–14), and the UW Youth Advisory Board (ages 14–17).

Wordplay Seattle, WA
Faculty Advisor: Prof. Amy J. Ko Sep 2025 – Present

- Developed speech-to-text input using TypeScript and Svelte, along with lesson materials, for Wordplay, an accessible, multilingual programming language and IDE for youth to create interactive typography.

NYU Music Experience Design Lab Shanghai, China
Faculty Advisor: Prof. Alex Ruthmann Jun 2024 – Dec 2024

- Engineered a web-based spatial audio learning tool using the Web Audio API that presents a multichannel musical work from the perspectives of its performer, audio engineer, and audience.

Deep Drawing Ann Arbor, MI
Faculty Advisors: Profs. Julie Zhu and John Granzow Jan 2024 – Present

- Implemented sound source localization using PyTorch for Deep Drawing, an AI co-performer that infers an artist's pen path from the sound of drawing on wood and renders it beside the original.

Visualizing Telematic Music Performance Ann Arbor, MI
Faculty Advisors: Profs. Michael Gurevich, John Granzow, and Brent Gillespie Jan 2023 – Dec 2024

- Designed how musicians' expressive movements remotely drove mechatronic displays in real time, and led the qualitative research on how musicians perceived these displays as embodied proxies for their co-performers.

Historical Organology of Chinese Musical Instruments Winston-Salem, NC
Faculty Advisor: Prof. Stewart Carter Oct 2021 – Sep 2024

- Worked from primary sources in classical Chinese to investigate how musical instruments evolved within imperial China and reached Europe through eighteenth-century Jesuit missionaries.

National Assessment of Education Quality (Music) Shanghai, China
Faculty Advisor: Prof. Danhong Yu Oct 2020 – Dec 2021

- Designed listening examinations for the music strand of China's National Assessment of Education Quality administered to 160,000 fourth and eighth graders.

TEACHING

Teaching Assistant

University of Washington

Seattle, WA

Sep 2025 – Jun 2026

- INFO 490 & 491: Practical Capstone I & II (Winter – Spring 2026)
- INFO 300: Research Methods (Autumn 2025)

Grader

University of Michigan

Ann Arbor, MI

Jan 2025 – Apr 2025

- EECS 486: Information Retrieval and Web Search (Winter 2025)

SERVICE

Reviewer, ACM Symposium on Computer-Human Interaction in Play (CHI PLAY): Work-in-Progress Track, 2026.

INDUSTRY EXPERIENCE

Software Engineer Intern

SoundBug

Shanghai, China

Jun 2023 – Aug 2023

- Developed a five-band equalizer plugin using C++ and the JUCE framework for SoundBug, an educational digital audio workstation widely adopted in Shanghai's public K-12 music curriculum.

R&D Intern

MicroPort NaviBot

Remote

Jun 2022 – Aug 2022

- Prototyped an open-platform implant library in Axure RP for SkyWalker, an FDA-cleared surgical robot for total knee arthroplasty, to accommodate components beyond MicroPort's own Evolution knee systems.

SKILLS

Programming and Markup Languages: Python, C++, JavaScript, HTML, CSS, Faust, ChucK, Max/MSP, Processing

Libraries, Frameworks, and Environments: PyTorch, React, Next.js, JUCE

Research Software: ATLAS.ti, Qualisys

UI/UX Prototyping Software: Figma, Axure RP

Music Production Software: Logic Pro, FL Studio

Computer-Aided Design (CAD) Software: Rhinoceros 3D, OpenSCAD