

Jialin Huang

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I am a Ph.D. student at George Mason University specializing in Human–AI Interaction and Accessibility. My research focuses on developing multimodal interfaces and human-centered generative systems that integrate sound, gesture, and visual feedback to support non-visual perception and creative workflows. I have extensive experience in mixed-method research, combining quantitative performance analysis with qualitative formative studies and thematic coding across expert and BVI user populations. My work bridges vision–language models such as GPT-4o and segmentation models like SAM with interactive system design, and I am currently extending these approaches toward generative AI–powered accessibility tools with BVI users. Through this, I aim to leverage Generative AI for Social Good by democratizing access to complex 3D graphics and digital media creation.

EDUCATION

George Mason University

Ph.D. in Computer Science, advised by Prof. Yotam Gingold

Fairfax, VA

Sept. 2021 - Present

University of Science and Technology of China

B.S. in Applied Mathematics.

Hefei, China

Sept. 2015 - Jun. 2019

- Thesis: Generation and Simplification of Quadrilateral Mesh on 2D Planes.

PUBLICATIONS

- [1] **Jialin Huang**, Rana Hanocka, Alexa Siu, Yotam Gingold, "Sonifying Fingertip Interactions for Non-Visual Virtual Shape Perception", SIGGRAPH Asia, 2023. (link)
- [2] **Jialin Huang**, Prem Seetharaman, Timothy Richard Langlois, Li-Yi Wei, Rubaiat Habib Kazi, Yotam Gingold, "MoSound: An Interactive Tool for Generative Sound Design in Motion Graphics", ACM CHI, 2026. (link)

RESEARCH EXPERIENCE

Adobe Research

Research Intern

Seattle, WA

May 2024 - Aug. 2024

- **Accessible sound design for motion graphics**: Designed human-centered generative workflows for motion graphics sound authoring by integrating vision–language models (GPT-4o), segmentation (SAM2), and audio synthesis, and evaluated the system through mixed-methods user studies combining quantitative usability metrics with qualitative formative feedback.

CraGL Lab@George Mason University

Graduate Student Research Assistant

Fairfax, VA

Sept. 2021 - present

- **Accessible 3D Mesh Generation and Editing (Ongoing Project)**: Designed interactive systems that combine ML-based 3D mesh generation from sparse geometry + text prompts with hand-object registration and gesture-based editing. Enables BVI users to retrieve, generate, and manipulate 3D models through multimodal interaction.
- **Non-Visual Shape Perception**: Non-visual shape perception using sonification for visually impaired people. Created a VR interface for users to sense the virtual 3D shape through hand tracking and sound-field-based sonification feedback.

SKILLS

○ Programming & Systems

Python, C++, C#, Java, Unity, React

○ Research Methods

Mixed-Methods HCI, Quantitative Usability Evaluation, Qualitative Interviews, Formative Studies, Thematic Coding, Accessibility Research

○ XR & Interaction Prototyping

VR Interaction Design, Hand Tracking, Sonification, Real-Time Multimodal Feedback, Blender, Oculus Quest

○ Multimodal AI & Generative Systems

Vision–Language Models (GPT-4o), Segmentation (SAM/SAM2), Text-to-Audio Generation, Multimodal Prompting, Human-in-the-loop Generative Pipelines