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 — **Fairfax, VA**
Ph.D. in Computer Science, advised by Prof. Yotam Gingold — *Sept. 2021 - Present*

University of Science and Technology of China — **Hefei, China**
B.S. in Applied Mathematics. — *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 — **Seattle, WA**
Research Intern — *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 — **Fairfax, VA**
Graduate Student Research Assistant — *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