

XIA SU

📍 Seattle, WA ✉ xiasu@cs.washington.edu 🔗 <https://xiasu.github.io> 📄 Google Scholar

PROFILE

I am a 4th year Ph.D. student in Computer Science at the University of Washington, advised by Prof. Jon Froehlich. My research focuses on Human-AI Interaction, especially how AI systems can understand, reason about, and support human interaction with real-world spaces.

I pursue two connected directions:

Spatial reasoning and world understanding — building indoor mapping, navigation, and assessment tools using drones, computer vision, 3D graphics, and MLLMs. I aim to advance how AI perceives and reasons about spatial environments for navigation, accessibility, and safety.

Creativity support tools — developing MLLM-based systems for audio, visual, and UI design. I invent creative interfaces, define domain-specific languages, and fine-tune models with domain data to ground AI in real creative workflows.

EDUCATION

University of Washington, Seattle, WA <i>PhD of Computer Science, in Human Computer Interaction. Instructed by Prof. Jon Froehlich</i>	<i>Sep 2021 - May 2026</i>
University of Washington, Seattle, WA <i>Master of Science, in Computer Science & Engineering.</i>	<i>Sep 2021 - May 2024</i>
RWTH Aachen, Nordrhein-Westfalen, Germany <i>Exchange Study</i>	<i>Oct 2016 - Feb 2017</i>
Tsinghua University, Beijing, China <i>Bachelor and Master of Architecture</i>	<i>Sep 2014 - June 2021</i>

EMPLOYMENT

UW CSE, Seattle, WA <i>Graduate Research Assistant/ Teaching Assistant</i> - Building next-generation indoor mapping and assessment models, interfaces, and workflows.	<i>September 2021 - Present</i>
Apple AIML, Seattle, WA <i>Machine Learning Intern</i> - Building UI generation systems that conform to UI design systems. - Project currently ongoing.	<i>April 2025 - September 2025</i>
Adobe Research, San Francisco, CA <i>Research Scientist Intern</i> - Designing and implementing image editing tools that help create 2.5D effects. - Work published and patent filed.	<i>June 2024 - September 2024</i>
Adobe Research, San Jose, CA <i>Research Scientist Intern</i> - Designing and implementing AR authoring pipeline that generates context-aware AR sound in real time. - Work published and patent filed.	<i>June 2023 - September 2023</i>
Microsoft Research Asia, Beijing, China <i>Research Intern</i> - Designing and implementing automatic retrieval pipelines to refine PowerPoint slide layouts	<i>June 2020 - March 2021</i>

SELECTED FULL PAPER PUBLICATIONS

FlyMeThrough: Human-AI Collaborative 3D Indoor Mapping with Commodity Drones

Xia Su, Ruiqi Chen, Jingwei Ma, Chu Li, Jon E. Froehlich

UIST'25 To Appear


AccessibilityScout

William Huang, **Xia Su**, Jon E. Froehlich, Yang Zhang

UIST'25 To Appear


SonifyAR: Context-aware Sound Generation in Augmented Reality

Xia Su, Jon E. Froehlich, Eunye Koh, Chang Xiao

UIST'24 


RASSAR: Room Accessibility and Safety Scanning in Augmented Reality

Xia Su, Kaiming Cheng, Han Zhang, Jaewook Lee, Wyatt Olson and Jon E. Froehlich

CHI'24 

Kinergy: Creating 3D Printable Motion using Embedded Kinetic Energy

Liang He, **Xia Su**, Huaishu Peng, Jeffrey I. Lipton, and Jon E. Froehlich

UIST'22 

Interior Layout Generation Based on Scene Graph and Graph Generation Model

Xia Su, Chenglin Wu, Wen Gao, and Weixin Huang

Design Computing and Cognition'20, Springer International Publishing, Cham, 267–282. 


Category, process, and recommendation of design in an interactive evolutionary computation interior design experiment: a data-driven study

Weixin Huang, **Xia Su**, Mingbo Wu, and Lijing Yang

AI EDAM 34, 2 (May 2020), 233–247. 

A data structure for studying 3D modeling design behavior based on event logs

Wen Gao, Chenglin Wu, Weixin Huang, Borong Lin, **Xia Su**

Automation in Construction 132, 103967. 

SELECTED POSTERS & DEMOS


Authoring 2.5D Designs with Depth Estimation

Xia Su, Cuong Nguyen, Matheus A Gadelha, Yu Shen, Stefano Petrangeli, Jon E. Froehlich

CHI'25 LBW


A Demo of DIAM: Drone-based Indoor Accessibility Mapping

Xia Su, Ruiqi Chen, Weiye Zhang, Jingwei Ma, Jon E. Froehlich

UIST'24 Demo 

RAIS: Towards A Robotic Mapping and Assessment Tool for Indoor Accessibility Using Commodity Hardware


Xia Su, Daniel Campos Zamora, Jon E. Froehlich

ASSETS'24 Poster 

PATENTS

FlyMeThrough: Human-AI Collaborative 3D Indoor Mapping with Commodity Drones

Xia Su, Ruiqi Chen, Jon E. Froehlich

Approved by UW CoMotion, in filing procedure 


Authoring 2.5D Designs with Depth Estimation

Xia Su, Cuong Nguyen, Matheus A Gadelha, Yu Shen, Stefano Petrangeli

Filed with Adobe Research

SonifyAR: Context-aware Sound Generation in Augmented Reality

Xia Su, Chang Xiao, Eunye Koh.

Filed with Adobe Research 

VOLUNTEERING & SERVICE

- Reviewer for top HCI conferences including CHI'24, CHI'24 LBW, SUI'24, UIST'24, CHI'25.
- Reviewer for top robotics conference ICRA'25.

PRESS & INVITED TALKS

- **Using augmented reality to improve accessibility**, Oregon Public Broadcast, Link, *Nov 17, 2023*
- **RASSAR: Room Accessibility and Safety Scanning in Augmented Reality**, UW CSE Colloquium, *Nov 2, 2023*
- **AR for Accessibility and Creativity**, Talk at Brown HCI Lab, *Oct 26, 2023*
- **Q&A: Researchers aim to improve accessibility with augmented reality**, UW News, Link *October 17, 2023*
- **Evaluating Real-world Accessibility**, Talk at Igarashi Lab at UTokyo, *May 14, 2023*

TEACHING

- Teaching Assistant for UW CSE 442 (Data Visualization)
- Teaching Assistant for UW MHCID Prototyping Studio
- Teaching Assistant for UW CSE 412 (Introduction to Data Visualization for non-CSE majors)
- Teaching Assistant for UW CSE 160 (Data Programming)
- Guest lecturing for UW CSEP 590 B (The Future of Access Technology) 2023 Winter
- Guest lecturing for UW CSE 493 E (The Future of Access Technology) 2023 Fall & 2024 Fall

MENTORING

- Mentoring Ruiqi (Richard) Chen, Master Student, University of Washington, *May 2024 - Present*
- Mentoring Weiye Zhang, Undergraduate, University of Washington, *March 2024 - Present*
- Mentoring Qiaochu (Steve) Liu, Master Student, Tsinghua University, *December 2022 - May 2023*
- Mentoring Jackson Ma, Undergraduate, University of Washington, *October 2022 - February 2023*