

# XIA SU

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## PROFILE

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I am a final 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 and support human interaction with real-world spaces.

I pursue two connected directions:

**Spatial reasoning and world understanding** — building indoor mapping, navigation, and assessment methods with VLM, computer vision, 3D graphics, and proprietary hardware. I aim to advance how AI perceives built environments, reasons about human-environment matches, for navigation, accessibility, and robotics control.

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

I'm **graduating in summer 2026** and actively seeking full-time industry opportunities as a research scientist or engineer. Please feel free to reach out if you have any opportunities!

## EDUCATION

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**University of Washington, Seattle, WA** Sep 2021 - May 2026

*PhD of Computer Science, in Human Computer Interaction. Instructed by Prof. Jon Froehlich*

**University of Washington, Seattle, WA** Sep 2021 - May 2024

*Master of Science, in Computer Science & Engineering.*

**RWTH Aachen, Nordrhein-Westfalen, Germany** Oct 2016 - Feb 2017

*Exchange Study*

**Tsinghua University, Beijing, China** Sep 2014 - June 2021

*Bachelor and Master of Architecture*

## EMPLOYMENT

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**UW CSE, Seattle, WA** September 2021 - Present

*Graduate Research Assistant/ Teaching Assistant*

- Building next-generation indoor mapping and assessment interfaces, systems, and ML workflows.

**Apple AIML, Seattle, WA** April 2025 - September 2025

*Machine Learning Intern*

- Building UI generation systems that conform to UI design systems.

- Project currently ongoing.

**Adobe Research, San Francisco, CA** June 2024 - September 2024

*Research Scientist Intern*

- Designing and implementing image editing tools that help create 2.5D effects from depth-estimation models.

- Work published and patent filed.

**Adobe Research, San Jose, CA** June 2023 - September 2023

*Research Scientist Intern*

- Designing and implementing AR authoring pipeline that generates context-aware AR sound in real time.

- Work published and patent filed.

**Microsoft Research Asia, Beijing, China** June 2020 - March 2021

*Research Intern*


- Designing and implementing automatic retrieval pipelines to refine PowerPoint slide layouts

## SELECTED FULL PAPER PUBLICATIONS

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

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

*UIST'25* 


### **Accessibility Scout: Personalized Accessibility Scans of Built Environments**

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

*UIST'25* 


### **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

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### **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

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### **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

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- 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

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- **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

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- 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

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- 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*