Xiyue Wang

Accessibility Lab
Miraikan - National Museum of Emerging Science and Innovation
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RESEARCH INTERESTS

Human-Computer Interaction; Accessibility; Tangible User Interfaces; Ubiquitous Computing; Affective Computing;
Data Processing; Data Analytics; Machine Learning; Deep Learning

EDUCATION

10/2018-9/2021	**Tohoku University**	Sendai, Miyagi, JAPAN
	Ph.D. in Information Science, Department of System Information Science	
	Information Contents Laboratory, Adviser: Prof. Yoshifumi Kitamura	

10/2016-9/2018	**Tohoku University**	Sendai, Miyagi, JAPAN
	Master of Information Science, Department of System Information Science	
	Information Contents Laboratory, Adviser: Prof. Yoshifumi Kitamura	

8/2012-5/2015	**Columbus College of Art & Design**	Columbus, OH, U.S.A
	Bachelor of Fine Arts, GPA: 3.873	
	Major: Fine Arts, Minor: 3D Animation, Industrial Design, Illustration	
	Honors: Honor Student, Summa Cum Laude	

8/2011-5/2012	**Columbus College of Art & Design**	Columbus, OH, U.S.A
	Exchange student, Major: Illustration	

9/2009-7/2011	**Xian Academy of Fine Arts**	Xian, Shaanxi, CHINA
	Bachelor of Fine Arts, Major: Oil Painting (transferred out)	

WORK EXPERIENCE

10/2021- present	**Miraikan - National Museum of Emerging Science and Innovation** Researcher	Koto, Tokyo, JAPAN
	• Conducting research on tangible interfaces for blind users	
	• Creating tools and applications to make museums accessible to blind visitors	

7/2022- 11/2023	**Miraikan Museum Tour for Visitors Who are Blind or Partially Sighted** Designer	Koto, Tokyo, JAPAN
	• Participatory design with teachers of visually impaired students and visually impaired museum visitors	
	• Designing and fabricating 3D-printed models and tactile materials	

3/2021-12/2021	**Sendai Youth Leadership Program** Mentor	Online
	• Teaching communication skills to high school students from several countries in Asia	
	• Organizing projects include how to make speeches and take meeting roles via the online platform	

10/2019-2/2020	**Master/Doctor Level Course: Big Data Challenge** Teaching Assistant	Sendai, Miyagi, JAPAN
	• Instructor of a group of two Ph.D students and one Master students	
	• Project: Discover the characteristics and behaviors of the users from mobile phone data	

4/2019-9/2019	**Bachelor Level Course: Pattern Recognition** Teaching Assistant	Sendai, Miyagi, JAPAN
	• Instructor of the laboratory courses of Neural Network	

| 9/2015-5/2016 | **Game Dive LTD** Game Designer and Animator | Columbus, OH, U.S.A |

9/2015-5/2016   **Game Dive LTD** Game Designer and Animator   Columbus, OH, U.S.A
                     • Illustrator and animator of a League of Legends guide game: Towel Dive

2/2015-4/2015   **Trident Design** Industrial Design Intern   Columbus, OH, U.S.A
                     • Ideated and prototyped Spatulove-A Spatula Glove

PROFESSIONAL EXPERIENCE

7/2025-present   **ACM VRST 2026** Accessibility Chair

4/2020-9/2021   **Japan Society for the Promotion of Science** (JSPS) Research Fellowship (DC2)

8/2020-5/2021   **ACM CHI 2021** Student Volunteer Chair (Local Support)

9/2018-5/2019   **ACM CHI 2019 Asian CHI Symposium** Organizer

7/2020-6/2021   **Sendai Dynamic Speakers (Toastmaster Club)** Vice President of Public Relations

7/2019-6/2020   **Sendai Lunch Speakers (Toastmaster Club)** Vice President of Public Relations

SKILLS

Language Skills
- Chinese: Native
- English: Professional proficiency; TOEIC 975/990 (2018); TOEFL iBT 102/120 (2015)
- Japanese: Conversational proficiency; JLPY N1 117/180 (2019)

Computer Skills
- Languages: Python, C#, Swift, Java
- Platform/libraries: Unity3D, OpenCV, Xcode, Android SDK, TensorFlow 2.0, PyTorch
- Design: Fusion 360, SolidWorks, Adobe creative suits, web design, poster design

PUBLICATIONS

Journal and International Conference Full Papers (peer-reviewed)
- Engaging Visually Impaired People in Science Museums Through an Immersive Workshop: Practices, Challenges, and Opportunities (To appear) **Honorable Mention**
  Xiyue Wang, Seita Kayukawa, Hironobu Takagi, Chieko Asakawa
  In Proceedings of the 27th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS '25). Association for Computing Machinery, New York, NY, USA. DOI: https://doi.org/10.1145/3663547.3746348

- Investigating "Touch and Talk" for Blind and Low Vision People: Science Communication Assistance Through Exploring Multiple Tactile Objects (To appear)
  Ayaka Tsutsui*, **Xiyue Wang*,** Hironobu Takagi, Chieko Asakawa (*equal contribution)
  In Proceedings of the 27th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS '25). Association for Computing Machinery, New York, NY, USA. DOI: https://doi.org/10.1145/3663547.3746373

- [BentoMuseum: 3D and Layered Interactive Museum Map for Blind Visitors](#) **Invited publication: Technical Highlights**
  Xiyue Wang, Seita Kayukawa, Hironobu Takagi, Chieko Asakawa
  Commun. ACM 67, 11 (November 2024), 93–102. DOI: https://doi.org/10.1145/3617678

- [Direct or Immersive? Comparing Smartphone-based Museum Guide Systems for Blind Visitors](#) **Best Technical Paper Award**
  Xiyue Wang, Seita Kayukawa, Hironobu Takagi, Giorgia Masoero, Chieko Asakawa
  In Proceedings of the 21st International Web for All Conference (W4A '24). Association for Computing Machinery, New York, NY, USA, 10–22. DOI: https://doi.org/10.1145/3677846.3677856

- [TouchPilot: Designing a Guidance System That Assists Blind People in Learning Complex 3D Structures](#)
  Xiyue Wang, Seita Kayukawa, Hironobu Takagi, Chieko Asakawa
  In Proceedings of the 25th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS '23).
  Association for Computing Machinery, New York, NY, USA, Article 5, 1–18.
  DOI: https://doi.org/10.1145/3597638.3608426

- [BentoMuseum: 3D and Layered Interactive Museum Map for Blind Visitors](#)
  Xiyue Wang, Seita Kayukawa, Hironobu Takagi, Chieko Asakawa
  In Proceedings of the 24th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS '22).
  Association for Computing Machinery, New York, NY, USA, Article 35, 1–14.
  DOI: https://doi.org/10.1145/3517428.3544811

- [Can Playing with Toy Blocks Reflect Behavior Problems in Children?](#)
  Xiyue Wang, Kazuki Takashima, Tomoaki Adachi, Yoshifumi Kitamura
  In Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems (CHI '21). Association for
  Computing Machinery, New York, NY, USA, Article 540, 1–14. DOI:https://doi.org/10.1145/3411764.3445119

- [AssessBlocks: Exploring Toy Block Play Features for Assessing Stress in Young Children after Natural Disasters](#)
  Xiyue Wang, Kazuki Takashima, Tomoaki Adachi, Patrick Finn, Ehud Sharlin, Yoshifumi Kitamura
  In Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies, Volume 4, Issue 1, Article 30
  (March 2020), 29 pages. DOI:https://doi.org/10.1145/3381016
  (Presented at UbiComp 2020)

- [SpotlessMind: A Design Probe for Eliciting Attitudes towards Sharing Neurofeedback](#)
  Passant Elagroudy, **Xiyue Wang**, Evgeny Stemasov, Teresa Hirzle, Svetlana Shishkovets, Siddharth Mehrotra, Albrecht
  Schmidt.
  In Proceedings of the Augmented Humans International Conference (AHs '20). Association for Computing Machinery,
  New York, NY, USA, Article 24, 1–8. DOI:https://doi.org/10.1145/3384657.3384800

International Conference Posters and Demonstrations (peer-reviewed)
- [An Investigation of Electrode Design for Physical Touch Extensions on a Capacitive Touch Surface](#)
  Xiyue Wang, Kaori Ikematsu, Kazuyuki Fujita, Kazuki Takashima, Yoshifumi Kitamura
  In The Adjunct Publication of the 32nd Annual ACM Symposium on User Interface Software and Technology (UIST '19).
  Association for Computing Machinery, New York, NY, USA, 66–68. DOI:https://doi.org/10.1145/3332167.3357117

- [Designing Action-Characterizing Toy Blocks for Behavior Assessments](#)
  Xiyue Wang, Miteki Ishikawa, Kazuki Takashima, Tomoaki Adachi, Ehud Sharlin, Patrick Finn, Yoshifumi Kitamura
  In Extended Abstracts of the 2018 CHI Conference on Human Factors in Computing Systems (CHI EA '18). Association
  for Computing Machinery, New York, NY, USA, Paper LBW513, 1–6. DOI:https://doi.org/10.1145/3170427.3188451

- Children's Blocks: Machine Learning and the Analysis of Motion During Play
  Xiyue Wang, Miteki Ishikawa, Kazuki Takashima, Tomoaki Adachi, Patrick Finn, Ehud Sharlin, Yoshifumi Kitamura
   Asian CHI Symposium at CHI'18 2018 ***Best Demo/Poster Award***

Symposiums (without peer review)
- Predicting Children's Behavior Problems using Toy Block Play Actions and Patterns
  Xiyue Wang, Kazuki Takashima, Tomoaki Adachi, Yoshifumi Kitamura
  8th German-Japanese University Presidents' Conference Data Science Workshop. Online 2021

- Activity-Characterizing Toy Blocks for Behavioral Assessments
  Xiyue Wang, Miteki Ishikawa, Kazuki Takashima, Tomoaki Adachi, Ehud Sharlin, Yoshifumi Kitamura
  4th Ensemble Workshop for Young Researchers at Tohoku University. Sendai, Japan 2018 ***Best Poster Award***

- Machine Learning Enhanced Novel Sensing with Smart Toy Blocks for Children's Action Recognition
  Xiyue Wang, Kazuki Takashima, Tamoaki Adachi, Yoshifumi Kitamura
  International Kick-off Symposium of Graduate Program in Data Science. Sendai, Japan 2018

Invited Talks
- Seeing by Touching and Listening – Research for and with Visually Impaired People
  Guest lecture in Higher-level Visual Information Processing course. Tohoku University. Sendai, Japan. 2025, 2024

- From the ruins: Predicting child behavior and mental health using toy block play data after natural disasters
  The Society for Bioacoustics 8th Annual Meeting. Online 2021

- The Block Project – Exploring Toy Blocks as a Tangible User Interface
  Interaction Lab, University of Calgary. Calgary, Alberta, Canada 2018

AWARDS

5/2024 **Best Technical Paper Award**
Direct or Immersive? Comparing Smartphone-based Museum Guide Systems for Blind Visitors
The 21st International Web for All Conference (W4A '24) in Singapore

10/2018 **1ST Place Winner** Symbiotic Mindfulness-An Collaborative Artistic Mind-Sharing Experience
BR41N.IO Brain-Computer Interface Designers Hackathon at the 2018 UIST school in Berlin, Germany

7/2018 **Best Poster Award** Activity-Characterizing Toy Blocks for Behavioral Assessment
4th Ensemble Workshop for Young Researchers, Tohoku University, 2018

4/2018 **Best Poster/Demo Award** Children's Blocks: Machine Learning and the Analysis of Motion During Play
Asian CHI symposium: Emerging HCI Research Collection in ACM CHI 2018
(Conference on Human Factors in Computing Systems) in Montreal, Canada

2012-2015 **President's List (four consecutive years)**
Columbus College of Art & Design, Columbus OH, U.S.A

8/2012 **Merit Scholarship**
Columbus College of Art & Design, Columbus OH, U.S.A

8/2011 **Second Prize Scholarship**
Xian Academy of Fine Arts, Xian, Shaanxi, CHINA

ACADEMIC SERVICES

Reviewer
- CHI 2025: The ACM Conference on Human Factors in Computing Systems
- TEI 2021: The 15th ACM International Conference on Tangible, Embedded and Embodied Interaction
- CHI 2019: The ACM Conference on Human Factors in Computing Systems
- IEEE VR 2019: The 26th IEEE Conference on Virtual Reality and 3D User Interfaces

Student Volunteer
- CHI 2021 (Student Volunteer Local Support Chair)
- CHI 2019
- UIST 2018
- ACM SIGGRAPH ASIA 2017
- ACM SIGGRAPH ASIA 2016
- ACM SIGGRAPH ASIA 2015 (Student Volunteer Team Leader)
- ACM SIGGRAPH 2015
- ACM SIGGRAPH ASIA 2014

ACTIVITIES & INVOLVEMENT

10/2018-9/2021 **Tohoku University Data Science Program**, Member

4/2019-present   **Sendai Dynamic Speakers (Toastmaster Club)**, Member

12/2018-9/2021 **Sendai Lunch Speakers (Toastmaster Club)**, Member

8/2014-5/2015   **CCAD (Columbus College of Art & Design) Student Leader**, Member

8/2014-5/2015   **CCAD Industrial Design Student Collective**, Member

REFERENCES

- Chieko Asakawa, Chief Executive Director, Miraikan – The National Museum of Emerging Science and Innovation, Tokyo, Japan. IBM Fellow, T. J. Watson Research Center, New York, United States
  chieko.asakawa@jst.go.jp

- Hironobu Takagi, Executive Director, Miraikan - The National Museum of Emerging Science and Innovation, Tokyo, Japan. Senior manager for the Accessibility Research at IBM Research – Tokyo, Tokyo, Japan
  hironobu.takagi@jst.go.jp

- Yoshifumi Kitamura, Professor, Department of Information Science, Tohoku University, Sendai, Miyagi, Japan
  kitamura@riec.tohoku.ac.jp

- Kazuki Takashima, Professor, Department of Information Science, Tohoku University, Sendai, Miyagi, Japan
  takashima@riec.tohoku.ac.jp

- Ehud Sharlin, Professor, Department of Computer Science, University of Calgary, Calgary, Alberta, Canada
  ehud@cpsc.ucalgary.ca

- Tomoaki Adachi, Professor, Department of Education, Miyagi Gakuin Women's University, Sendai, Miyagi, Japan
  adachi@miyagi.email.ne.jp