Masaki Kuribayashi

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Doctor's Student at Waseda University. Interested in the field of Human-Computer Interaction, particularly in assistive systems for supporting navigation of people with visual impairment (Accessibility). Also interested in navigation tasks using multimodal modalities, particularly vision and language. Experience in conducting user-centered & inclusive design with people with visual impairment, development of navigation systems using smartphones and robots, designing/conducting user studies, and conducting statistical analysis.

Education

Apr. 2023 - Current
Doctor of Engineering
Graduate School of Advanced Science and Engineering, Waseda University
Advisor: Shigeo Morishima

Apr. 2021 - Mar. 2023
Master of Engineering
Graduate School of Advanced Science and Engineering, Waseda University
Advisor: Shigeo Morishima

Apr. 2017 - Mar. 2021
Bachelor of Science
School of Advanced Science and Engineering, Department of Physics, Waseda University
Advisor: Shigeo Morishima

Work Experience

Apr. 2023 - Current
Research Fellow DC1
JSPS Research Fellowship for Young Scientists
Advisor: Shigeo Morishima
- Mentored five Bachelors and Masters students.
- Led two students to submit to CHI2024 and Mobile HCI 2024 as a co-first author.
- Conducted in-the-wild user studies at a public shopping mall and analyzed using statistical tests.
- Worked on visual language navigation (VLN) model by levearging large language models.
- Collected dataset and constructed virtual environment for VLN task.

Jan. 2024 - May. 2024
Visiting Researcher
Human-to-Everything (H2X) Lab, Boston University
Advisor: Eshed Ohn-Bar
- Working on visual language model that navigates blind people.
- Working on motion modeling of blind peoples walking motion

Apr. 2021 - Dec. 2023
Research Internship
IBM Research
Advisor: Chieko Asakawa, Hironobu Takagi
- Launched a research project by identifying a challenge people with visual impairment face.
- Developed an iOS navigation application for people with visual impairment.
- Developed an ML model for detecting intersections on iOS by gathering a unique dataset.
- Conducted a user study and analyzed using statistical tests.

Jun. 2022 - Sep. 2022	**Visiting Researcher**
	Cognitive Assistance Lab, Robotics Institute, Carnegie Mellon University
	Advisor: Chieko Asakawa, Daisuke Sato
	- Identified technical challenges of navigation robots and launched and led a research project.
	- Designed a system through a user-centered design process with people with visual impairment.
	- Implemented a practical sign recognition algorithm using ML models.
	- Conducted a user study in a large-scale environment and analyzed using statistical tests.

Awards

Mar. 2021	**Azusa Ono Memorial Award**
	Waseda University
	The most prestigious award by Waseda University, which 0.014% of students receive.

Dec. 2020	**Best Paper Award**
	JSPS WISS 2020 (a domestic conference in Japan)
	An award that the top 3% of paper receives.

Scholarship

Jan. 2024 - Current	**Visiting support from Super Global University (SGU)**, ICT & Robotics, Waseda University
Jan. 2024 - Current	**Scholarship for short-term study abroad,** Japan Student Services Organization (JASSO)
Apr. 2023 - Mar. 2026	**Research Fellowship for Young Scientists DC1**, Japan Society for the Promotion of Science
Mar. 2023	**Isao Okawa Scholarship for Information Technology Science**, Waseda University. 200K JPY
Apr. 2021 - Mar. 2023	**Scholarship for Outstanding Master Students**, Japan Student Services Organization (JASSO)

Skills

Programming Language:	**Swift, Python**
Frameworks / Platforms:	**Xcode, ARKit, OpenCV, Docker**
Others:	**XCode, Adobe CC (Illustrator, Premiere Pro, and InDesign), User Studies, Statistical Analysis**

Publications

Journal Papers and Conference Full Papers

[1]   **Masaki Kuribayashi***, Seita Kayukawa*, Hironobu Takagi, Chieko Asakawa, and Shigeo Morishima (* - equal contribution). 2021. **LineChaser: A Smartphone-Based Navigation System for Blind People to Stand in Line.** In Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems. (CHI 2021). DOI: https://doi.org/10.11 45/3411764.3445451

[2]   **Masaki Kuribayashi**, Seita Kayukawa, Jayakorn Vongkulbhisal, Daisuke Sato, Chieko Asakawa, Hironobu Takagi, Shigeo Morishima. 2022. **Corridor-Walker: Mobile Indoor Walking Assistance for Blind People to Avoid Obstacles and Recognize Intersections.** In Proceedings of the 24th International Conference on Human-Computer Interaction with Mobile Devices and Services. (Mobile HCI 2022). DOI: https://doi.org/10.1145/3546714

[3]   **Masaki Kuribayashi,** Tatsuya Ishihara, Daisuke Sato, Jayakorn Vongkulbhisal, Karnik Ram, Seita Kayukawa, Hironobu Takagi, Shigeo Morishima, and Chieko Asakawa. 2023. **PathFinder: Designing a Map-less Navigation System for Blind People in Unfamiliar Buildings.** In Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems. (CHI 2023).
DOI: https://doi.org/10.1145/3544548.3580687

[4]   Yusuke Miura, Erwin Wu, **Masaki Kuribayashi**, Hideki Koike, Shigeo Morishima. 2023. **Exploration of Sonification Feedback for People with Visual Impairment to Use Ski Simulator.** Augmented Humans 2023. (AHs 2023).
DOI: https://doi.org/10.1145/3582700.3582702

Short Papers and Posters

[5]   **Masaki Kuribayashi**, Seita Kayukawa, Jayakorn Vongkulbhisal, Daisuke Sato, Chieko Asakawa, Hironobu Takagi, Shigeo Morishima. 2021. **Designing a Smartphone-Based Assistance System for Blind People to Recognize Intersections and Obstacles in Indoor Corridors.** Mobile and Ubiquitous Systems. (Mobiquitous 2021).

[6]   Yusuke Miura, **Masaki Kuribayashi**, Erwin Wu, Hideki Koike, Shigeo Morishima. 2022. **A Study on Sonification Method of Simulator-Based Ski Training for People with Visual Impairment.** SIGGRAPH Asia 2022 Posters. (SA '22 Posters).

[7]   **Masaki Kuribayashi**, Hironobu Takagi, Chieko Asakawa, Shigeo Morishima. 2023.**Textual and Directional Sign Recognition Algorithm for People with Visual Impairment by Linking Texts and Arrows**. The IEEE/CVF Conference on Computer Vision and Pattern Recognition 2023 Workshop (CVPR 2023 Workshop).

Academic Service

CHI 2023 LBW Reviewer
Mobile HCI 2023 Full Paper Reviewer
CHI 2024 Full Paper Reviewer
IMWUT2024 Full Paper Reviewer
CHI 2025 Local Arrangement Chair Assistant, Organzing Committee

Invited Talks

May. 2023   Masaki Kuribayashi, "**Introduction to Accessibility Research and My Experiences of Entrance Exams**", Hong Kong Japanese School

Nov. 2023   Masaki Kuribayashi, "**PathFinder: Designing a Map-less Navigation System for Blind People in Unfamiliar Buildings**", Workshop on Interactive Software and Systems (WISS)