Seita Kayukawa, Ph. D.

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Peoject Lecturer at Keio University

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Education

Apr. 2020 - Sept. 2022 **Ph. D. of Engineering**
Graduate School of Advanced Science and Engineering, Waseda University
Advisor: Shigeo Morishima

Apr. 2018 - Mar. 2020 **Master of Engineering**
Graduate School of Advanced Science and Engineering, Waseda University
Advisor: Shigeo Morishima

Apr. 2014 - Mar. 2018 **Bachelor of Science**
Department of Applied Physics, Waseda University
Advisor: Shigeo Morishima

Work Experience

Apr. 2026 - Current **Project Lecturer,** Accessibility and Mobility Lab., Keio University

Apr. 2023 - Mar. 2026 **Researcher,** IBM Research

Apr. 2021 - Mar. 2023 **Researcher**
Accessibility Lab., Miraikan - National Museum of Emerging Science and Innovation

Apr. 2020 - Mar. 2023 **Research Fellow (~Sept. 2022: DC1, Oct. 2022~: PD)**
JSPS Research Fellowship for Young Scientists

Feb. 2019 - Mar. 2020 **Research Intern,** IBM Research

May 2018 - Sept. 2018 **Research Intern,** Cognitive Assistance Lab., Carnegie Mellon University

Research Interest

Human-Computer Interaction;
Real World Accessibility for People with Visual Impairments; Navigation; Non-visual Interface

Publications

Journal Papers and Conference Full Papers

[1] Yaxin Hu, Masaki Kuribayashi, Allan Wang, **Seita Kayukawa**, Daisuke Sato, Bilge Mutlu, Hironobu Takagi, Chieko Asakawa. 2026. **Robot-Assisted Group Tours for Blind People**. In *Proceedings of the 2026 CHI Conference on Human Factors in Computing Systems (***CHI '26***)*.
DOI: https://doi.org/10.1145/3772318.3790425

[2] Xiyue Wang, **Seita Kayukawa**, Hironobu Takagi, and Chieko Asakawa. 2025. **Engaging Visually Impaired People in Science Museums Through an Immersive Workshop: Practices, Challenges, and Opportunities**. In *Proceedings of the 27th International ACM SIGACCESS Conference on Computers and Accessibility (***ASSETS '25***)*.
DOI: https://doi.org/10.1145/3663547.3746348

[3] Rie Kamikubo, **Seita Kayukawa**, Yuka Kaniwa, Allan Wang, Hernisa Kacorri, Hironobu Takagi, and Chieko Asakawa. 2025. **Beyond Omakase: Designing Shared Control for Navigation Robots with Blind People.** In *Proceedings of the 2025 CHI Conference on Human Factors in Computing Systems (***CHI '25***)*.
DOI: https://doi.org/10.1145/3706598.3714112

[4] Masaya Kubota*, Masaki Kuribayashi*, **Seita Kayukawa**, Hironobu Takagi, Chieko Asakawa, and Shigeo Morishima (* - equal contribution). 2024. **Snap&Nav: Smartphone-based Indoor Navigation System For Blind People via Floor Map Analysis and Intersection Detection.** In *Proceedings of the ACM on Human-Computer Interact*ion, Volume 8, Issue MHCI, Article 275 (September 2024), 22 pages.
DOI: https://doi.org/10.1145/3676522

[5] Yuka Kaniwa*, Masaki Kuribayashi*, **Seita Kayukawa**, Daisuke Sato, Hironobu Takagi, Chieko Asakawa, and Shigeo Morishima (* - equal contribution). 2024. **ChitChatGuide: Conversational Interaction Using Large Language Models for Assisting People with Visual Impairments to Explore a Shopping Mall**. In *Proceedings of the ACM on Human-Computer Interact*ion, Volume 8, Issue MHCI, Article 247 (September 2024), 25 pages.
DOI: https://doi.org/10.1145/3676492

[6] Xiyue Wang, **Seita Kayukawa**, Hironobu Takagi, Giorgia Masoero, and Chieko Asakawa. 2024. **Direct or Immersive? Comparing Smartphone-based Museum Guide Systems for Blind Visitors**. In *Proceedings of the 21st International Web for All Conference (***W4A '24***)*.
DOI: https://doi.org/10.1145/3677846.3677856

[7] Xiyue Wang, **Seita Kayukawa**, Hironobu Takagi, and Chieko Asakawa. 2023. **TouchPilot: Designing a Guidance System that Assists Blind People in Learning Complex 3D Structures**. In *Proceedings of the 25th International ACM SIGACCESS Conference on Computers and Accessibility (***ASSETS '23***)*.
DOI: https://doi.org/10.1145/3597638.3608426

[8] **Seita Kayukawa**, Daisuke Sato, Masayuki Murata, Tatsuya Ishihara, Hironobu Takagi, Shigeo Morishima, and Chieko Asakawa. 2023. **Enhancing Blind Visitor's Autonomy in a Science Museum Using an Autonomous Navigation Robot**. In *Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems* **(CHI '23)**.
DOI: https://doi.org/10.1145/3544548.3581220

[9] 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 '23***)*.
DOI: https://doi.org/10.1145/3544548.3580687

[10] Xiyue Wang, **Seita Kayukawa**, Hironobu Takagi, and Chieko Asakawa. 2022. **BentoMuseum: 3D and Layered Interactive Museum Map for Blind Visitors**. In *Proceedings of the 24th International ACM SIGACCESS Conference on Computers and Accessibility (***ASSETS '22***)*.
DOI: https://doi.org/10.1145/3517428.3544811

[11] **Seita Kayukawa**, Daisuke Sato, Masayuki Murata, Tatsuya Ishihara, Akihiro Kosugi, Hironobu Takagi, Shigeo Morishima, and Chieko Asakawa. 2022. **How Users, Facility Managers, and Bystanders Perceive and Accept a Navigation Robot for Visually Impaired People in Public Buildings**. In *Proceedings of the 31st IEEE International Conference on Robot & Human Interactive Communication (***IEEE RO-MAN '22***)*.
DOI: https://doi.org/10.1109/RO-MAN53752.2022.9900717

[12] Masaki Kuribayashi, **Seita Kayukawa**, Jayakorn Vongkulbhisal, Daisuke Sato, Chieko Asakawa, Hironobu Takagi, and Shigeo Morishima. 2022. **Corridor-Walker: Mobile Indoor Walking Assistance for Blind People to Avoid Obstacles and Recognize Intersections**. In *Proceedings of the ACM on Human-Computer Interact*ion, Volume 6, Issue MHCI, Article 179 (September 2022), 22 pages.
DOI: https://dx.doi.org/10.1145/3546714

[13] Yutaro Yamanaka, **Seita Kayukawa**, Hironobu Takagi, Yuichi Nagaoka, Yoshimune Hiratsuka, and Satoshi Kurihara. 2021. **One-Shot Wayfinding Method for Blind People via OCR and Arrow Analysis with a 360-degree Smartphone Camera**. In *Proceedings of the 18th EAI International Conference on Mobile and Ubiquitous Systems: Computing, Networking and Services (***MobiQuitous '21***)*.
DOI: https://doi.org/10.1007/978-3-030-94822-1_9

[14] 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 '21***)*.
DOI: https://doi.org/10.1145/3411764.3445451

[15] **Seita Kayukawa**, Tatsuya Ishihara, Hironobu Takagi, Shigeo Morishima, and Chieko Asakawa. 2020. **Guiding Blind Pedestrians in Public Spaces by Understanding Walking Behavior of Nearby Pedestrians**. In *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (***IMWUT***)*. Volume 4, Issue 3, Article 85 (September 2020), 22 pages.
DOI: https://doi.org/10.1145/3411825

[16] **Seita Kayukawa**, Keita Higuchi, João Guerreiro, Shigeo Morishima, Yoichi Sato, Kris Kitani, and Chieko Asakawa. 2019. **BBeep: A Sonic Collision Avoidance System for Blind Travellers and Nearby Pedestrians**. In *Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems (***CHI '19***)*.
DOI: https://doi.org/10.1145/3290605.3300282

Conference Short Papers, Demonstrations, and Posters

[17] Hironobu Takagi, Kakuya Naito, Daisuke Sato, Masayuki Murata, **Seita Kayukawa**, and Chieko Asakawa. 2025. **Field Trials of Autonomous Navigation Robot for Visually Impaired People**. In *Proceedings of the Extended Abstracts of the 2025 CHI Conference on Human Factors in Computing Systems (***CHI '25 Case Study***)*.
DOI: https://doi.org/10.1145/3706599.3706663

[18] **Seita Kayukawa**, Keita Higuchi, Shigeo Morishima, and Ken Sakurada. 2023. **3DMovieMap: An Interactive Route Viewer for Multi-Level Buildings**. In *Proceedings of the Extended Abstracts of the 2023 CHI Conference on Human Factors in Computing Systems (***CHI '23 LBW***)*.
DOI: https://doi.org/10.1145/3544549.3585885

[19] Masaki Kuribayashi, **Seita Kayukawa**, Jayakorn Vongkulbhisal, Daisuke Sato, Chieko Asakawa, Hironobu Takagi, and Shigeo Morishima. 2021. **Designing a Smartphone-Based Assistance System for Blind People to Recognize Intersections and Obstacles in Indoor Corridors**. In *Proceedings of the 18th EAI International Conference on Mobile and Ubiquitous Systems: Computing, Networking and Services (***MobiQuitous '21 Poster***)*.
DOI: https://doi.org/10.1007/978-3-030-94822-1

[20] **Seita Kayukawa**, Hironobu Takagi, João Guerreiro, Shigeo Morishima, and Chieko Asakawa. 2020. **Smartphone-Based Assistance for Blind People to Stand in Lines**. In *Proceedings of the Extended Abstracts of the 2020 CHI Conference on Human Factors in Computing Systems (***CHI '20 LBW***)*.
DOI: https://doi.org/10.1145/3334480.3382954

[21] **Seita Kayukawa**, Tatsuya Ishihara, Hironobu Takagi, Shigeo Morishima, and Chieko Asakawa. 2020. **BlindPilot: A Robotic Local Navigation System that Leads Blind People to a Landmark Object**. In *Proceedings of the Extended Abstracts of the 2020 CHI Conference on Human Factors in Computing Systems (***CHI '20 LBW***)*.
DOI: https://doi.org/10.1145/3170427.3189085

[22] Ryo Shimamura, **Seita Kayukawa**, Takayuki Nakatsuka, Shoki Miyagawa, and Shigeo Morishima. 2019. **A Study on the Sense of Burden and Body Ownership on Virtual Slope**. In *Proceedings of the IEEE Conference on Virtual Reality and 3D User Interfaces (***IEEE VR '19 Poster***)*.
DOI: https://doi.org/10.1109/VR.2019.8797960

[23] **Seita Kayukawa**, Keita Higuchi, Ryo Yonetani, Masanori Nakamura, Yoichi Sato, and Shigeo Morishima. 2018. **Dynamic Object Scanning: Object-Based Elastic Timeline for Quickly Browsing First-Person Videos**. In *Extended Abstracts of the 2018 CHI Conference on Human Factors in Computing Systems (***CHI '18 LBW and DEMO***)*.
DOI: https://doi.org/10.1145/3170427.3189085

Awards

Oct. 2024 **Honorable Mention Award**
ASSETS 2025 (co authored paper, 1st author: Xiyue Wang)

May 2024 **Best Technical Paper Award**
W4A 2024 (co authored paper, 1st author: Xiyue Wang)

Nov. 2021 **Outstanding Student Paper Award**
MobiQuitous 2021 (co authored paper, 1st author: Yutaro Yamanaka)

Dec. 2020 **Best Paper Award**
JSSST WISS 2020 (a Domestic Conference in Japan)

Mar. 2020 **IPSJ Yamashita SIG Research Award**
Information Processing Society of Japan (IPSJ)

Mar. 2019 **Azusa Ono Memorial Award**
Waseda University

Mar. 2019 **Best Paper Award**
IPSJ Interaction 2019 (a Domestic Conference in Japan)

Scholarships

May 2020 - Mar. 2021 **Early Bird Program (Support for Young Researchers), Waseda Research Institute for Science and Engineering**

Apr. 2018 - Mar. 2020 **JASSO Scholarship for Outstanding Master Students**

May 2018 - Sept. 2018 **Visiting Support from Super Global University**

May 2018 - Aug. 2018 **JASSO Scholarship for Short-term Study Abroad**

Skills

Programming Languages: C++, Python, Swift, HTML, CSS

Libraries / Platforms: OpenCV, Qt5, ROS, Arduino, CMake

OS: macOS, Ubuntu

Others: Adobe CC (Illustrator, Premiere Pro, Photoshop, InDesign)
User Studies, Statistical Analysis