Shohei Nagai

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Education

The University of Tokyo Apr. 2013 – Mar. 2015
Master of Arts and Sciences in Interdisciplinary Information Studies *Tokyo, Japan*

- **Advisor:** Professor Jun Rekimoto
- **Thesis:** Research on Experience Sharing System Using Omnidirectional View

The University of Tokyo Apr. 2008 – Mar. 2012
Bachelor of Engineering in Mechanical Engineering *Tokyo, Japan*

- **Advisor:** Professor Takahisa Kato
- **Thesis:** Research on the Wettability of Diamond-like Carbon

Research and Professional Experience

Preferred Robotics Nov. 2022 – Present
Software Engineer *Tokyo, Japan*

- Developed **Kachaka**, a domestic robot designed to carry and rearrange movable furniture, with a focus on its **computer vision system for navigation.**
- Developed and deployed **autonomous retail robots** to navigate stores and recognize shelves to **optimize inventory management processes.**
- Designed and implemented a robust **shelf recognition system.**

Microsoft Apr. 2015 – Oct. 2022
Senior Software Engineer *Tokyo, Japan*

- Led a 3-person team to prototype the integration of **foundation models (e.g., GPT3.5)** into Windows OS.
- Developed and launched **Voice Typing**, a speech-to-text input feature integrated into Windows OS, delivering **improved recognition accuracy across 40+ languages** with a modernized UI.
- Delivered **text input software (IME)** for 20+ Asian languages, integrated into Windows OS.

Sony Computer Science Laboratory Aug. 2013 – Mar. 2015
Research Assistant *Tokyo, Japan*

- Developed a **telepresence system** enabling users to share surrounding environments and transfer experiences and skills remotely.
- Designed and fabricated a communication device featuring **real-time image processing** and **voice communication capabilities**, ensuring intuitive and efficient remote interaction.

Publications

1. Shunichi Kasahara, **Shohei Nagai**, and Jun Rekimoto. **JackIn Head: Immersive Visual Telepresence System with Omnidirectional Wearable Camera**. *IEEE Transactions on Visualization and Computer Graphics (TVCG)*, 23(3):1222–1234, 2017

2. Shunichi Kasahara, **Shohei Nagai**, and Jun Rekimoto. **First Person Omnidirectional Video: System Design and Implications for Immersive Experience**. In *Proceedings of the ACM International Conference on Interactive Experiences for TV and Online Video (TVX)*, pages 33–42, 2015

3. **Shohei Nagai**, Shunichi Kasahara, and Jun Rekimoto. **Directional Communication using Spatial Sound in Human-Telepresence**. In *Proceedings of the 6th Augmented Human International Conference (AH)*, pages 159–160, 2015

4. **Shohei Nagai**, Shunichi Kasahara, and Jun Rekimoto. **Immersive Experience Transmission with Omnidirectional Image for Human-Telepresence**. In *Proceedings of the Information Processing Society of Japan Interaction*, pages 88–97, 2015 (in Japanese)

5. **Shohei Nagai**, Shunichi Kasahara, and Jun Rekimoto. **LiveSphere: Sharing the Surrounding Visual Environment for Immersive Experience in Remote Collaboration**. In *Proceedings of the Ninth International Conference on Tangible, Embedded, and Embodied Interaction (TEI)*, pages 113–116, 2015

6. Shunichi Kasahara, **Shohei Nagai**, and Jun Rekimoto. **LiveSphere: Immersive Experience Sharing with 360 degrees Head-mounted Cameras**. In *Adjunct Proceedings of the 27th Annual ACM Symposium on User Interface Software and Technology (UIST)*, pages 61–62, 2014

Awards and Honors

Dean's Award in Graduate School of Interdisciplinary Information Studies 2015
The University of Tokyo, 3 out of 15 candidates

Graduate School Type 1 Scholarship, Exemption from Repayment for Outstanding Achievements 2015
Japan Student Services Organization (JASSO), full waiver ($7,000, 10% of scholarship recipients)

Mentoring

Software Engineer Internship Mentor 2016 – 2019
Microsoft *Tokyo, Japan*

- Mentored 4 interns during two-month summer internship programs, offering guidance on software engineering practices and project development focused on text input and Windows OS integration.

Skills

Programming Languages: Python, C/C++, C#, Java, TypeScript
Frameworks & Libraries: ROS/ROS2, PyTorch, FastAPI, OpenCV, React
Operating Systems: Linux, Windows, macOS
Tools & Platforms: Git, Docker, OpenVINO, ONNX
Hardware & Prototyping: Machining (Milling, Lathe, Drill), CAD, 3D Printing, Soldering

Language

Japanese: Native
English: Fluent (TOEFL 105/120)