

Sosuke Ichihashi

PhD Student at Georgia Institute of Technology

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Research: systems changing atmosphere interactively

- I create systems that **controls atmosphere to promote certain actions, to enhance well-being, to power and control passive peripheral devices, and to edit physical environments.** Computers have enabled us to perceive and act on object and data. However, such interactions are done only on our computing devices. Interactive Atmosphere expands them to the entire space: The ambient temperature, light, sound, smells and wind resonate seamlessly with your intentions and actions, just as your arms move.
- I **invent methods to provide atmospheric sensory feedback and explore novel interaction opportunities realized with them.** One such example is [ThermoBlinds](#), which remotely provides fast-switching thermal sensation. Immersive thermal experience has been slow and not interactive. ThermoBlinds utilize a shutter mechanism and an infrared source behind it (just like an LCD and a back light) to realize immersive thermal interactions. Its applications include [RattlEye](#), which enables people to feel the temperature of objects they see.
- As the foundation for interactive atmosphere, **my work includes optical and thermal technologies and their applications in fabrication, communication, and power delivery.** Creating and evaluating Interactive Atmosphere also **contributes new insights on human perceptual systems.**

Education

'22– Ph.D. Student (Digital Media) at Georgia Institute of Technology
Advisor: Dr. Noura Howell

2022 MS (Interdisciplinary Info. Studies) at The University of Tokyo
Advisor: Dr. Masahiko Inami

2020 BE (Global Eng.) at Kyoto University
Advisor: Dr. Takahiro Sayama

2019 Exchange (Elec. & Comp. Eng.) at The University of Texas at Austin

Publications

ACM CHI, UIST, and TEI are regarded as the top-tier publications in Human Computer Interaction (20-25% acceptance rate; CS is a conference-based field).

- 7 Swell by Light: An Approachable Technique for Freeform Raised Textures
Sosuke Ichihashi, Noura Howell, HyunJoo Oh
In Proc. TEI '25
- 6 Towards Designing for Everyday Thermal Experiences
Sosuke Ichihashi, Kosha Bedha, Noura Howell
In Proc. TEI '25
- 5 Hydroptical Thermal Feedback: Spatial Thermal Feedback Using Visible Lights and Water
➡ [watch video](#)
Sosuke Ichihashi, Masahiko Inami, Hsin-Ni Ho, Noura Howell
In Proc. UIST '24
- 4 Swarm Body: Embodied Swarm Robots
➡ [watch video](#)
Sosuke Ichihashi, So Kuroki, Mai Nishimura, Kazumi Kasaura, Takefumi Hiraki, Kazutoshi Tanaka, Shigeo Yoshida
In Proc. CHI '24
Popular Choice Honorable Mention Award
- 3 ThermoBlinds: Non-Contact, Highly-Responsive Thermal Feedback for Thermal Interaction
➡ [watch video](#)

Sosuke Ichihashi, Arata Horie, Masaharu Hirose, Zendai Kashino, Shigeo Yoshida, Sohei Wakisaka, Masahiko Inami
In Proc. SIGGRAPH '22 Emerging Technologies

- 2 High-Speed Non-Contact Thermal Display Using Infrared Rays and Shutter Mechanism
Sosuke Ichihashi, Arata Horie, Masaharu Hirose, Zendai Kashino, Shigeo Yoshida, Masahiko Inami
In Proc. UbiComp-ISWC '21 Adjunct MIMSVAI '21
MIMSVAI Best Paper Award
- 1 Effects of Thermal Presentation According to the Other's Gaze in Remote Communication
Sosuke Ichihashi, Arata Horie, Zendai Kashino, Shigeo Yoshida, Masahiko Inami
Presentation in ISMCR '21

Exhibit & Demo

6	Swell by Light	TEI '25	2025
5	Swarm Body	CHI '24	2024
4	Hydroptical Thermal Display	STT Workshop (CHI '23)	2023
3	Thermal Painting	Georgia Tech DM Demo Day '23	2023
2	Heat-O-Phone	Guthman Fair '23	2023
1	ThermoBlinds	SIGGRAPH '22 E-Tech	2022

Research Job Experience

2024.07 – 2024.08	Ho Haptics Lab @ Kyushu University Research Intern advised by Prof. Hsin-Ni Ho	Fukuoka, Japan
2023.08 – 2024.02	Code Craft Lab @ Georgia Institute of Technology Independent Study advised by Prof. HyunJoo Oh	Atlanta, USA
2023.05 – 2023.08	Interaction Group @ Omron Sinic X Research Intern advised by Dr. Shigeo Yoshida	Tokyo, Japan

Funding

9	\$6k	Georgia Tech LMC Tech Fee	2025
8	\$2k	Japan Health & Research Institute Research Fund	2024
7	\$5k	CDAIT Student IoT Innovation Capacity Building Challenge	2023
6	\$20k	INOAC International Education Scholarship	2022
5	\$3k	JST SPRING GX Research Grant	2022
4	\$0.5k	SICE SI Haptics Committee Research Grant	2021
3	\$2k	Kyoto University Civil Engineering Society Fund	2019
2	\$7.5k	Japan Student Services Organization Overseas Study Scholarship	2018
1	\$2k	Kyoto University Civil Engineering Society Funds	2017

Selected Awards

3	CHI Interactivity Popular Choice Honorable Mention Award	2024
2	CDAIT IoT Innovation Capacity Building Challenge Honorable Mention	2023
1	MIMSVAI Best Paper Award	2022

Mentoring

4	Adam M Vaughn (ECE undergrad at Georgia Tech)	2024
3	Luke X Wang (CS undergrad at Georgia Tech)	2022
2	Chang Ye Huang (ME undergrad at Georgia Tech)	2022
1	Sora Satake (MIEP undergrad at UTokyo. Now: Master at UTokyo)	2020

Teaching

7	TA: LMC 2700 Intro to Computational Media	Georgia Tech, USA	2024
6	Instructor: LMC 2400 Intro to Media Studies	Georgia Tech, USA	2024
5	TA: LMC 6313 Principle of Interaction Design	Georgia Tech, USA	2023
5	Instructor: Arduino Workshop	GSU, USA	2022
4	Instructor: JSPS Science Dialogue	Akashi Kita HS, Japan.	2018
3	Instructor: Japanese History	JHP ES, Macedonia	2018
2	Instructor: KU Disaster Prevention School	Five ES's, Indonesia	2017
1	TA: Eng. Sci. Global Communication Program	Ngee Ann Poly, Singapore	2017

References

1. Noura Howell (PhD Advisor)

Assistant Professor, Georgia Tech

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2. Masahiko Inami

Professor, University of Tokyo

[🌐 website](#)

3. Shigeo Yoshida

Principal Investigator, Omron Sinic X

[🌐 website](#)

4. Hsin-Ni Ho

Associate Professor, Kyushu University

[🌐 website](#)