

Sosuke Ichihashi

PhD Candidate at Georgia Institute of Technology

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Research: systems changing atmosphere interactively

- I create systems that **dynamically alters atmosphere**.
I believe interactive atmosphere brings a new interaction paradigm through immersive sensory feedback from our periphery. We have been directly manipulating conventional interactive systems on our desktops, hands or skin. Interactive atmosphere expands our experiences beyond these tiny fraction of our whole sensory experiences.
- 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 have been slow and not interactive. ThermoBlinds utilize shutter mechanism and 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 works include 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. Candidate (Digital Media) at Georgia Institute of Technology**

Advisor: **Prof. Noura Howell**

2022 **MS (Interdisciplinary Info. Studies) at The University of Tokyo**

Advisor: **Prof. Masahiko Inami**

2020 BE (Global Eng.) at Kyoto University

Advisor: Prof. 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).

- 10 To appear
Sosuke Ichihashi, Kosha Bedha, Noura Howell
In Proc. TEI '24
- 9 To appear
Sosuke Ichihashi, Noura Howell, HyunJoo Oh
In Proc. TEI '24
- 8 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
- 7 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
- 6 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
- 5 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
 - 4 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
 - 3 The effect of temperature presentation according to the gaze of others on remote communications
Sosuke Ichihashi, Arata Horie, Zendai Kashino, Shigeo Yoshida, and Masahiko Inami
In Proc. VRSJ '21 Publication in Japanese
 - 2 Rapid Thermal Presentation by Controlling Infrared Irradiance using a Shutter Mechanism
Sosuke Ichihashi, Arata Horie, Zendai Kashino, Shigeo Yoshida, Masahiko Inami
In Proc. IPSJ EC '21 Publication in Japanese
 - 1 Preliminary Study on Orientation Perception with Far Infrared Stimulus
Sosuke Ichihashi, Arata Horie, Hiroto Saito, Zendai Kashino, Masahiko Inami
In Proc. SICE SI '20 Publication in Japanese

Exhibit & Demo

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

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	Lecturer: 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

✉ nhowell18@gatech.edu | 🌐 [website](#)

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](#)