

# Sosuke Ichihashi

PhD Student at Georgia Institute of Technology

✉ [sichihashi3@gatech.edu](mailto:sichihashi3@gatech.edu) | 🌐 [sosuke-ichihashi.com](http://sosuke-ichihashi.com) | ✖ @RefreshSource

## Research: optical systems for physical interactions

- **I make light brighter until information becomes physical and powering environment.**  
My research focuses on moving from traditional visual media to high-energy media. Digital media has used light to communicate information, providing visual representations. However, light can also affect physically if the intensity is high enough. This shift offers us a multimodal way to interact with digital and physical worlds.
- **I invent optical media technologies to provide physical sensations and explore the novel interaction opportunities realized with them.** For example, [Hydrooptical Thermal Feedback](#) creates the feeling of instant water temperature changes by using LEDs to heat the skin. This alters how the water feels without actually changing its temperature. Building on this, [Hydrooptical Bath](#) provides a relaxing experience with measurable physical effects on the user.
- As the foundation for high-energy media, [my work](#) includes optical technologies and their applications in **human-computer interaction, fabrication, communication, and power delivery.**

## Education

'22— Ph.D. Student (Digital Media) at **Georgia Institute of Technology**  
Advisor: **Brian Magerko & Noura Howell**

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

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

- 8 Thermal and Tactile Integration in Human Liquid Perception Using Viscous Solutions and Visible Light  
Junjie Hua, **Sosuke Ichihashi**, Hsin-Ni Ho  
In Proc. IEEE Haptics Symposium '26  
**Best Technical Long Paper Award**
- 7 Swell by Light: An Approachable Technique for Freeform Raised Textures  
📺 [watch video](#)  
**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 Hydrooptical 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

7	Thermal Painting	TEI '26	2026
6	Swell by Light	TEI '25, GTDM Demo Day	2025
5	Swarm Body	CHI '24	2024
4	Hydroptical Thermal Display	STT Workshop (CHI '23)	2023
3	Thermal Painting	GTDM Demo Day	2023
2	Heat-O-Phone	Guthman Fair '23	2023
1	ThermoBlinds	SIGGRAPH '22 E-Tech	2022

## Research Collaborations

2025.11 – Present	<b>Contextual Computing Group &amp; Ka Moamoa Lab @ Georgia Tech</b> <b>Prof. Thad Starner &amp; Prof. Josiah Hester</b>	Atlanta, USA
2025.08 – Present	<b>Flavin Neuromachines Lab @ Georgia Tech</b> <b>Prof. Matthew Flavin</b>	Atlanta, USA
2024.07 – 2024.08	<b>Ho Haptics Lab @ Kyushu University</b> Research Intern advised by <b>Prof. Hsin-Ni Ho</b>	Fukuoka, Japan
2023.08 – 2024.02	<b>Code Craft Group @ Georgia Tech</b> Independent Study advised by <b>Prof. HyunJoo Oh</b>	Atlanta, USA
2023.05 – 2023.08	<b>Interaction Group @ Omron Sinic X</b> Research Intern advised by <b>Dr. Shigeo Yoshida</b>	Tokyo, Japan

## Funding

9	\$6k	Georgia Tech LMC Technology 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

4	IEEE Haptics Symposium Best Technical Long Paper Award	2026
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

## Academic Services

I have reviewed 21 papers for HCI and Haptics conferences and have received 2 special recognitions.

3	TEI, CHI ( <b>Special Recognition</b> )	2026
2	TEI, IEEE VR, DIS, CHI, CHI LBW	2025
1	CHI LBW ( <b>Special Recognition</b> ), DIS, VRST, EuroHaptics, AsiaHaptics	2024

## 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

I have taught in elementary schools, high schools, undergrad and grad schools in five countries.

8	TA: LMC 2700 Intro to Computational Media	Georgia Tech, USA	2025
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. Brian Magerko (PhD Advisor)

Professor, Georgia Tech

✉ [magerko@gatech.edu](mailto:magerko@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](#)

### 5. HyunJoo Oh

Associate Professor, Georgia Tech

🌐 [website](#)

### 6. Thad Starner

Professor, Georgia Tech

🌐 [website](#)