SOSUKE ICHIHASHI

Web: sosucat.github.io/portfolio **E-mail**: sichihashi3@gatech.edu

RESEARCH INTEREST

I focus on augmenting perceptual and emotional experiences in human-computer and interpersonal interactions. Current work involves developing **fast-switching, non-contact thermal feedback methods** and designing their applications such as **gaze-based thermal feedback** and **subtle intervention**.

EDUCATION

Ph.D. in Digital Media (GPA: 4.00/4.00) August 2022 - June 2026 (Anticipated)
Georgia Institute of Technology
Advisor: Dr. Noura Howell

Master of Arts and Sciences in Information Studies (GPA: 3.97/4.00) April 2020 - March 2022
The University of Tokyo
Information Somatics Lab (Advisor: Dr. Masahiko Inami)

Exchange in Electrical and Computer Engineering (University Honors) August 2018 - May 2019
The University of Texas at Austin

Bachelor of Engineering, Global Engineering April 2016 - March 2020
Kyoto University
Innovative Disaster Prevention Technology and Policy Research Lab (Advisor: Dr. Takahiro Sayama)

CONFERENCE PUBLICATIONS & PRESENTATIONS

1. **Sosuke Ichihashi**, Arata Horie, Masaharu Hirose, Zendai Kashino, Shigeo Yoshida, Sohei Wakisaka and Masahiko Inami. *ThermoBlinds: Non-Contact, Highly Responsive Thermal Feedback for Thermal Interaction.* In Special Interest Group on Computer Graphics and Interactive Techniques Conference Emerging Technologies (SIGGRAPH '22 Emerging Technologies). 2022. Peer Reviewed Publication.
2. **Sosuke Ichihashi**, Arata Horie, Zendai Kashino, Shigeo Yoshida, and Masahiko Inami. *Effects of Thermal Presentation According to the Other's Gaze in Remote Communication .* International Symposium on Measurement and Control in Robotics 2021 (ISMCR '21). 2021. Presentation.
3. **Sosuke Ichihashi**, Arata Horie, Masaharu Hirose, Zendai Kashino, Shigeo Yoshida, and Masahiko Inami. *High-Speed Non-Contact Thermal Display Using Infrared Rays and Shutter Mechanism.* In Adjunct Proceedings of the 2021 ACM International Joint Conference on Pervasive and Ubiquitous Computing and Proceedings of the 2021 ACM International Symposium on Wearable Computers (UbiComp-ISWC '21 Adjunct). 2021. The First Workshop on Multiple Input Modalities and Sensations for VR/AR Interactions (MIMSVAI '21) **Best Paper Award**. Peer Reviewed Publication.
4. **Sosuke Ichihashi**, Arata Horie, Zendai Kashino, Shigeo Yoshida, and Masahiko Inami. *The effect of temperature presentation according to the gaze of others on remote communications.* The 26th Annual Conference of Virtual Reality Society of Japan. 2021. Publication in Japanese.
5. **Sosuke Ichihashi**, Arata Horie, Zendai Kashino, Shigeo Yoshida, and Masahiko Inami. *Rapid Thermal Presentation by Controlling Infrared Irradiance using a Shutter Mechanism.* Information Processing Society of Japan Entertainment Computing 2021. 2021. Publication in Japanese.
6. **Sosuke Ichihashi**, Arata Horie, Hiroto Saito, Zendai Kashino, and Masahiko Inami. *Preliminary Study on Orientation Perception with Far Infrared Stimulus.* The Society of Instrument and Control Engineering System Integration Division Conference. 2020. Publication in Japanese.

RESEARCH EXPERIENCE

Master's Student April 2020 - March 2022
Information Somatics Lab, The University of Tokyo

Developed a fast-switching, non-contact thermal feedback method using infrared rays and a shutter mechanism, conducted quantitative and qualitative evaluations, examined its applications (UbiComp 2021 MIMSVAI and SIGGRAPH 2022 Emerging Technologies).

Undergraduate Research April 2019 - March 2020
Innovative Disaster Prevention Technology and Policy Research Lab, Kyoto University

Optimized a rainfall-runoff-inundation model for 120 rivers in Japan with combinatorial optimization.

HONORS & AWARDS

INOAC International Education and Scholarship Foundation ($18,888) August 2022 - July 2024

JST SPRING GX Research Grant ($3000) Development of Gaze Interaction With Two-Dimensional Thermal Feedback and Establishment of Its Design Theory April - September 2022

MIMSVAI Best Paper Award in UbiComp-ISWC '21 Adjunct 2021

SICE SI Haptics Committee Research Grant ($500) Five research proposals were awarded. 2021

Kyoto University Civil Engineering Society Funds ($4,000) 2017, 2019

Japan Student Services Organization Overseas Study Scholarship ($7,500) 2018 - 2019

TECHNICAL STRENGTHS

Hardware Prototyping	Arduino[1], Raspberry Pi[2], Fusion 360[1], 3D printing[1], Laser cutting[1]
Software Prototyping	Unity[1], p5.js[1] Processing[2], TouchDesigner[2]
Programming Language	Python[1], Fortran[1], MATLAB[2], C[2], C++[2], Java[2], C#[2], JavaScript[1]
Others	ArcGIS[1], AutoCAD[1], Biosensing[2], Eye Tracking[1], Revit[2], Tiled[1]

MENTORING

Mentor for an undergraduate student November 2020 - March 2021
Information Somatics Lab, The University of Tokyo

Discussed the design of a haptic device that provides various rotational skin stretch distributions on the forearm and guided the hardware development as well as a psychophysical evaluation. He joined Dr. Hiroyuki Shinoda's lab as a master's student and is continuing his study on haptics.

REFERENCES

Noura Howell
Assistant Professor, The School of Literature, Media, Communication, Georgia Institute of Technology
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Masahiko Inami
Professor, Research Center for Advanced Science and Technology, The University of Tokyo
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Yasuaki Monnai
Associate Professor, Research Center for Advanced Science and Technology, The University of Tokyo
monnai@star.rcast.u-tokyo.ac.jp

[1] Excellent [2] Strong