SOSUKE ICHIHASHI

Web: sosucat.github.io/portfolio **E-mail**: sosuke@star.rcast.u-tokyo.ac.jp

RESEARCH INTEREST

Human-computer interaction researcher focusing on augmenting perceptual and emotional experiences. Current work involves, but not limited to, developing **highly responsive, non-contact thermal feedback methods** and designing **gaze-based thermal feedback**.

EDUCATION

Ph.D. in Digital Media August 2022 - Present
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 highly responsive, non-contact thermal feedback method using infrared rays and a shutter mechanism, examined its applications, such as gaze interaction with thermal feedback, and presented them at several conferences including the MIMSVAI 2021 and SIGGRAPH 2022 Emerging Technologies. Evaluated the users' perceived intensity as well as reaction time and am planning to submit it to a future conference.

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

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

University Honors (Fall 2018) Completion of a full course load with outstanding grades. 2018

TECHNICAL STRENGTHS

Hardware Prototyping	Arduino[1], Raspberry Pi[2], Fusion360[1], 3D printing[1], Laser cutting[1]
Software Prototyping	Unity[1], TouchDesigner[2]
Programming Language	Python[1], Fortran[1], MATLAB[2], C[2], C++[2], Java[2], C#[2]
Other Software	ArcGIS[1], AutoCAD[1], Gurobi[2], Revit[2], SketchUp[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
nhowell8@gatech.edu

Masahiko Inami
Professor, Research Center for Advanced Science and Technology, The University of Tokyo
drinami@star.rcast.u-tokyo.ac.jp

Takahiro Sayama
Associate Professor, Disaster Prevention Research Institute, Kyoto University
sayama.takahiro.3u@kyoto-u.ac.jp

[1] Proficient [2] Intermediate