SOSUKE ICHIHASHI

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RESEARCH INTEREST

Human-computer interaction researcher focusing on inventing **haptic devices** that augment perceptual and emotional experiences. Current work involves, but not limited to, developing **highly responsive, non-contact thermal feedback methods** by mechanically controlling infrared rays and augmenting gaze interactions through design and evaluation of **gaze-based haptic feedback to the face**.

EDUCATION

Master of Art and Science in Information Studies (GPA: 3.95/4.00) 2020-2022
The University of Tokyo
Information Somatics Lab (Supervisor: Dr. Masahiko Inami)

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

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

CONFERENCE PUBLICATIONS & PRESENTATIONS

1. **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 2021). 2021. Presentation.
2. **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 2021) **Best Paper Award**. Peer Reviewed Publication.
3. **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 (VRSJ 2021). 2021. Publication in Japanese.
4. **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.
5. **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 (SICE SI 2020). 2020. Publication in Japanese.

RESEARCH EXPERIENCE

Master's Student April 2020 - Present
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 and presented it at the MIMSVAI 2021. Evaluated the users' perceived intensity as well as reaction time and am planning to submit it to ACM Designing Interactive Systems (DIS) 2022.

- Explored gaze-based thermal feedback to augment visual media appreciation and remote communication and presented it at the ISMCR 2021.

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

Masahiko Inami
Professor
Research Center for Advanced Science and Technology, The University of Tokyo
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Takahiro Sayama
Associate Professor
Disaster Prevention Research Institute, Kyoto University
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Zendai Kashino
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Research Center for Advanced Science and Technology, The University of Tokyo
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[1] Proficient
[2] Intermediate