

Toshiya Isomoto

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I am a Ph.D. student researching the human-computer interaction, focusing on the human-centered design of input techniques. The goal of my research is to develop the interface everyone can interact with computers. In particular, I am interested in developing a gaze-based interface using the knowledge of the user's behavior.

EDUCATION

- 2020 – Current University of Tsukuba,
Doctoral Program in Computer Science
Advisor: Prof. Buntarou Shizuki
- 2018 – 2020 University of Tsukuba, Graduate School of SIE, Department of CS.
Master's course in Computer Science
Advisor: Prof. Buntarou Shizuki
- 2016 – 2018 University of Tsukuba, College of Media Arts, Science and Technology
Bachelor of Science in Media Sciences and Engineering
- 2011 – 2016 National Institute of Technology, Tokuyama College, Department of
Computer Science and Electronic Engineering
Foundation degree of Engineering

INTERNSHIP

- Aug. 2018 – Mar. 2023 **Research Internship**, Yahoo Japan Corporation
Investigating human behavior and developing a gaze-based interface
Advisor: Dr. [Shota Yamanaka](#)

FELLOWSHIP

- Apr. 2021 – Present Japan Society for the Promotion of Science (JSPS)
Research Fellowship for Young Scientists
Approx. \$15K for 2 years (Apr. 2021 – Mar. 2023)

AWARDS

- 2020 - Best Student Award by Japan Student Service Organization, with Exemption of Refunding \$20K of Loan-based Scholarship
- Award by the Dean of Graduate School of Systems and Information Engineering of University of Tsukuba
- 2019 - Student Award, Information Processing Society of Japan, SIGHCI
- 2018 - Award by the Dean of College of Media Arts, Science and Technology of University of Tsukuba

JOURNAL

- 2023 [1] **Toshiya Isomoto**, Shota Yamanaka, Buntarou Shizuki. Exploring Dwell-time from Human Cognitive Processes for Dwell Selection. Proceedings of the ACM on Human-Computer Interaction Volume 7, Issue ETRA, Article 159, pp.1-15. May 2023.
- 2022 [2] **Toshiya Isomoto**, Shota Yamanaka, Buntarou Shizuki. “Dwell Selection with ML-based Intent Prediction Using Only Gaze Data”. Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies. Volume 6, Issue 3, Article 120 (September 2022), 21 pages.
- 2020 [3] **Toshiya Isomoto**, Shota Yamanaka, Buntarou Shizuki . “Gaze-based Interaction Technique Robust Against Unintentional Activation using Dwell-then-Gesture”. Human Interface Society (Special Issue on Gaze Interface), 14 pages. (In Japanese).

CONFERENCE PAPER

- 2021 [4] **Toshiya Isomoto**, Shota Yamanaka, Buntarou Shizuki. “Relationship between Dwell-Time and Model Human Processor for Dwell-based Image Selection”. ACM Symposium on Applied Perception 2021 (SAP 2021). Article 6, 5 pages. (reviewed short paper)
- 2020 [5] **Toshiya Isomoto**, Shota Yamanaka, Buntarou Shizuki. “Dwell selection with Fixation Detection System for the Alleviation of the Midas-touch problem”. Workshop on Interactive Systems and Software 2021 (WISS 2020), Article 15, 6 pages. (In Japanese, reviewed full paper)
- [6] **Toshiya Isomoto**, Shota Yamanaka, Buntarou Shizuki. “Gaze-based Command Activation Technique Robust Against Unintentional Activation using Dwell-then-Gesture”. Proceedings of Graphics Interface 2020 (GI 2020), Article 24, 11 pages, May 2020. (reviewed full paper)

- 2018 [7] **Toshiya Isomoto**, Toshiyuki Ando, Buntarou Shizuki, and Shin Takahashi. “Dwell Time Reduction Technique using Fitts' Law for Gaze-Based Target Acquisition”. Proceedings of the 2018 ACM Symposium on Eye Tracking Research & Applications (ETRA 2018), pp. 26:1-26:7, ACM, New York, NY, USA, Warsaw, Poland, June 2018. (reviewed full paper)

POSTER AND DEMO

- 2022 [8] **Toshiya Isomoto**, Shota Yamanaka, Buntarou Shizuki. “Interaction Design of Dwell Selection Toward Gaze-based AR/VR Interaction”. Proceedings of the 2022 ACM Symposium on Eye Tracking Research & Applications (ETRA 2022), No.: 39, 2 pages, ACM, New York, NY, USA, Seattle, USA, June 2022.
- 2020 [9] **Toshiya Isomoto**, Shota Yamanaka, Buntarou Shizuki. “Gaze-based Command Activation Technique using Two-level Stroke”. Proceedings of the 2020 ACM CHI symposia on ASIAN CHI SYMPOSIUM: EMERGING HCI RESEARCH COLLECTION (Asian CHI Symposium 2020), 6 pages, ACM, New York, NY, USA, Hawaii, USA, April 2020.
- 2019 [10] **Toshiya Isomoto**, Toshiyuki Ando, Buntarou Shizuki, and Shin Takahashi. “Investigation of Midas-touches in Dwell Time Reduction Technique using Fitts' Law for Dwell-Based Target Acquisition”. Proceedings of the 2019 ACM CHI symposia on ASIAN CHI SYMPOSIUM: EMERGING HCI RESEARCH COLLECTION (Asian CHI Symposium 2019), 8 pages, ACM, New York, NY, USA, Glasgow, UK, May 2019.
- 2018 [11] **Toshiya Isomoto**, Akira Ishii, Shuta Nakamae, and Buntarou Shizuki. “Target Selection Technique Using Space Below Cardboard VR Goggles”. Proceedings of the 2018 ACM CHI symposia on ASIAN CHI SYMPOSIUM: EMERGING HCI RESEARCH COLLECTION (Asian CHI Symposium 2018), 8 pages, ACM, New York, NY, USA, Montréal, Canada, April 2018.

Full list of publications is here: <https://www.iplab.cs.tsukuba.ac.jp/~isomoto/>

TECHNICAL SKILLS

- Programming Languages: Proficient in: C, C#, Ruby, Python (for Machine Learning)
Basic ability: JavaScript, HTML, CSS, Unity, Java for Android
- Design Skills: Proficient in: Adobe CC (After Effects, Illustrator, Premier Pro, Photoshop)

TEACHING EXPERIENCES

Spring 2021 & - Teaching Assistant: University of Tsukuba
Autumn 2020 Special Topics in Computer Human Interaction I
with Buntarou Shizuki

Spring 2019 & - Teaching Assistant: University of Tsukuba
Spring 2018 Programming Laboratory IA・IB with Buntarou Shizuki

Spring 2019 & - Teaching Assistant: University of Tsukuba
Spring 2018 Programming Languages and Methodology with Buntarou Shizuki

Autumn 2018 - Teaching Assistant: University of Tsukuba
Programming Laboratory II with Yoshihiro Kanamori

GRANTS

Sep. 2020 - Research grant. Crowdfunding on Academist (Approx. \$6K)

Apr. 2020 to Research grant. Tateishi Science and Technology Promoting Foundation C.

Mar. 2023 (Approx. \$15K for 3 years)

Apr. 2019 Travel grant. Marubun Research Promotion Foundation (Approx. \$2K)

Sept. 2022 Travel grant. Marubun Research Promotion Foundation (Approx. \$2K)

Jun. 2022 Travel grant. Murata Science Foundation (Approx. \$2K)

Jun. 2018 Travel grant. The NEC C&C Foundation (Approx. \$2.5K)

Apr. 2018 Travel grant. University of Tsukuba, Department of Systems and Information
Engineering (Approx. \$1K)

Dec. 2017 Travel grant. University of Tsukuba, College of Media Arts, Science and
Technology (Approx. \$0.6K)

Review

Asian CHI Symposium 2021, ETRA 2022, COGAIN 2022, ISS 2022, VRST 2022,
IPSJ Journal 2020, 2022 (in Japanese)

Conference Service

Student volunteer on 26th Workshop on Interactive Systems and Software (WISS 2018,
Japanese workshop). Sep. 25th - 28th, 2018