Akira Matsuda

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Research Interests

Akira is an HCI researcher and a software engineer. He received his Ph.D. in Interdisciplinary Information Studies, master's degree in Arts and Sciences from The University of Tokyo, and bachelor's degree in Engineering from Shibaura Institute of Technology in 2023, 2017, and 2015, respectively.
His role in Human-Computer Interaction is to create a future in which we transfer our personalities to communicate or collaborate remotely with high engagement. He is focusing not only on communication by language but also on communication using nonverbal messages through an act of seeing, such as gaze behavior and eye contact, by proposing an approach for presenting the nonverbal message modalities that differ from face-to-face communication and go beyond physical constraints.
Keywords: Remote Communication; Remote Collaboration; Telepresence; Nonverbal Message; Gaze; Eye Contact

Professional / Work Experiences

2017 – 2019 **Assistant Researcher** Sony Computer Science Laboratories, Inc. (Sony CSL), Tokyo, Japan

February 2017 – March 2017 **Research Internship** National Institute of Advanced Industrial Science and Technology (AIST), Ibaraki, Japan

September 2015 **Internship** Sony Corporation, Tokyo, Japan

2015 – 2017 **Software Engineer** Yukai Engineering Inc., Tokyo, Japan iOS app development, Server back-end development, Embedded software development

2015 – · · · · **Software Engineer** Link-U, Inc., Tokyo, Japan iOS app development, UI/UX design

March 2011 – June 2011 **Software Engineer** Lunascape Corporation, Inc., Tokyo, Japan iOS app development

November 2010 – March 2012 **Software Engineer** Galapagos, Inc., Inc., Tokyo, Japan iOS app development

Education

2017 – 2023 Ph.D. in Interdisciplinary Information Studies (Applied Computer Science) Graduate School of Interdisciplinary Information Studies **The University of Tokyo**, Tokyo, Japan, Supervisor: Jun Rekimoto

2015 – 2017 M.A.S. in Interdisciplinary Information Studies (Applied Computer Science) Graduate School of Interdisciplinary Information Studies**The University of Tokyo**, Tokyo, Japan, Supervisor: Jun Rekimoto

2011 – 20015 B.E. in Computer Science School of Engineering **Shibaura Institute of Technology**, Tokyo, Japan, Supervisor: Hiroyuki Nakamura

Academic Qualification

2023 Ph.D in Interdisciplinary Information Studies Graduate School of Interdisciplinary Information Studies, **The University of Tokyo**, Tokyo, Japan

Academic Qualification (continued)

2017 M.A.S. in Interdisciplinary Information Studies Graduate School of Interdisciplinary Information Studies, **The University of Tokyo**, Tokyo, Japan

2015 B.E. in Computer Science School of Engineering, **Shibaura Institute of Technology**, Tokyo, Japan

Academic Services

Reviewer Experience

2017 35th ACM Conference on Human Factors in Computing Systems (ACM CHI 2017)

Research Publications

Journal Articles

1. A. **Matsuda**, T. Okuzono, H. Nakamura, H. Kuzuoka, and J. Rekimoto, "A surgical scene replay system for learning gastroenterological endoscopic surgery skill by multiple synchronized-video and gaze representation," *Proc. ACM Hum.-Comput. Interact.*, vol. 5, no. EICS, May 2021. DOI: 10.1145/3461726.

Conference Proceedings

1. A. **Matsuda**, K. Nozawa, K. Takata, A. Izumihara, and J. Rekimoto, "Hapticpointer: A neck-worn device that presents direction by vibrotactile feedback for remote collaboration tasks," in *Proceedings of the Augmented Humans International Conference*, ser. AHs '20, Kaiserslautern, Germany: Association for Computing Machinery, 2020, ISBN: 9781450376037. DOI: 10.1145/3384657.3384777.

2. A. **Matsuda**, K. Nozawa, and J. Rekimoto, "Jackin neck: A neckband wearable telepresence system designed for high comfortability," in *Proceedings of the 2018 ACM International Conference on Interactive Surfaces and Spaces*, ser. ISS '18, Tokyo, Japan: Association for Computing Machinery, 2018, pp. 415–418, ISBN: 9781450356947. DOI: 10.1145/3279778.3279917.

3. T. Takahashi, K. Shiro, A. **Matsuda**, *et al.*, "Augmented jump: A backpack multirotor system for jumping ability augmentation," in *Proceedings of the 2018 ACM International Symposium on Wearable Computers*, ser. ISWC '18, Singapore, Singapore: Association for Computing Machinery, 2018, pp. 230–231, ISBN: 9781450359672. DOI: 10.1145/3267242.3267270.

4. A. **Matsuda**, T. Miyaki, and J. Rekimoto, "Scalablebody: A telepresence robot that supports face position matching using a vertical actuator," in *Proceedings of the 8th Augmented Human International Conference*, ser. AH '17, DOI:http://doi.acm.org/10.1145/3041164.3041182, Silicon Valley, California: ACM, 2017, 13:1–13:9, ISBN: 978-1-4503-4835-5. DOI: 10.1145/3041164.3041182.

5. S. Yamashita, A. **Matsuda**, N. Hamanishi, S. Suwa, and J. Rekimoto, "Demulti display: A multiplayer gaming environment for mitigating the skills gap," in *Proceedings of the Eleventh International Conference on Tangible, Embedded, and Embodied Interaction*, ser. TEI '17, DOI:http://doi.acm.org/10.1145/3024969.3025074, Yokohama, Japan: ACM, 2017, pp. 457–463, ISBN: 978-1-4503-4676-4. DOI: 10.1145/3024969.3025074.

6. A. Kadomura, A. **Matsuda**, and J. Rekimoto, "Casper: A haptic enhanced telepresence exercise system for elderly people," in *Proceedings of the 7th Augmented Human International Conference 2016*, ser. AH '16, DOI:http://doi.acm.org/10.1145/2875194.2875197, Geneva, Switzerland: ACM, 2016, 2:1–2:8, ISBN: 978-1-4503-3680-2. DOI: 10.1145/2875194.2875197.

7. A. **Matsuda** and J. Rekimoto, "Scalablebody: A telepresence robot supporting socially acceptable interactions and human augmentation through vertical actuation," in *Proceedings of the 29th Annual Symposium on User Interface Software and Technology*, ser. UIST '16 Adjunct,

DOI:http://doi.acm.org/10.1145/2984751.2985718, Tokyo, Japan: ACM, 2016, pp. 103–105, ISBN: 978-1-4503-4531-6. DOI: 10.1145/2984751.2985718.

8 A. **Matsuda**, M. Sugaya, and H. Nakamura, "Luminous device for the deaf and hard of hearing people," in *Proceedings of the Second International Conference on Human-agent Interaction*, ser. HAI '14, DOI:http://doi.acm.org/10.1145/2658861.2658922, Tsukuba, Japan: ACM, 2014, pp. 201–204, ISBN: 978-1-4503-3035-0. DOI: 10.1145/2658861.2658922.

Skills

Languages	JAPANESE: Native ENGLISH: Intermediate (TOEIC score 735/990, 2014)
Programming Language	C, C++, Objective-C, Swift, Processing, PHP
Platform / Framework	openFrameworks, macOS, Arduino
Technology	Bluetooth Low Energy
Software	Xcode, Sketch, Adobe Illustrator, Adobe Premiere Pro

Awards and Grants

Awards

2022 **Google Open Source Peer Bonus Award**, https://opensource.googleblog.com/2022/03/Announcing-First-Group-of-Google-Open-Source-Peer-Bonus-Winners-in-2022.html.

2020 **Honorable Mentions Award**, Augmented Humans International Conference, https://dl.acm.org/doi/10.1145/3384657.3384777

Grants

2017 Project Fund in Summer Founders Program organized by Division of University Corporate Relations (1,500 dolls)

References

Prof. Jun Rekimoto
Interfaculty Initiative in Information Studies, The University of Tokyo, Tokyo, Japan
https://www.sonycsl.co.jp/person/rekimoto.html

Dr. Takashi Miyaki
Interfaculty Initiative in Information Studies, The University of Tokyo, Tokyo, Japan
https://sites.google.com/site/miyakitakashi/

Prof. Hiroyuki Nakamura
Dept. of Humanity/Social Sciences, Shibaura Institute of Technology, Tokyo, Japan
mailto:nkmr@shibaura-it.ac.jp

Dr. Jun Kato
National Institute of Advanced Industrial Science and Technology (AIST), Ibaraki, Japan
http://junkato.jp/resume.html