

# Shunichi Kasahara

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## PROFILE

Researcher, Engineer and Artist / Project leader, Sony Computer Science Laboratories, Inc.

## RESEARCH STATEMENT : CYBERNETIC HUMANITY

Cybernetic Humanity is a new research field that focuses on the "new humanity" emerged from the integration of humans and computers, and explores it through approaches from both computer science and human science. My research will focus on the dynamics of humanity woven by the integration of humans and computers from multifaceted perspectives which includes augmented sensation and perception as fundamental elements that constitute our embodiment, 'self' through extended cognition, and "social self," which is formed through interaction and relationships with others.

## EXPERIENCE

- 2021 - Present | Project Leader,  
Sony Computer Science Laboratories, Inc.
- 2021 - Present | Project Performer (PI) in Cybernetic Being Project  
JST Moonshot R&D program
- 2020 - Present | Researcher  
Sony Computer Science Laboratories, Inc.
- 2018 - 2021 | Project Assistant Professor  
Research Center for Advanced Science and Technology.  
The University of Tokyo.
- 2017 - 2020 | Associate Researcher  
Sony Computer Science Laboratories, Inc.
- 2014 - 2017 | Assistant Researcher  
Sony Computer Science Laboratories, Inc.
- 2014 - 2017 | Research Affiliate  
MIT Media Lab
- 2008 - 2014 | Engineer, Research  
Sony Corporation

## EDUCATION

- 2017 | The University of Tokyo, Japan, Ph.D.,  
Interdisciplinary Information Studies, 2017
- 2008 | Waseda University, Japan  
M.Sc., Applied Physics, Human-Computer Interaction

## SELECTED PUBLICATIONS

1. Adrien Verhulst, Yasuko Namikawa, [Shunichi Kasahara](#). 2022. "Parallel Adaptation: Switching between Two Virtual Bodies with Different Perspectives Enables Dual Motor Adaptation." IEEE ISMAR 2022
2. Shimizu, Kye, Naoto Ienaga, Kazuma Takada, Maki Sugimoto, and [Shunichi Kasahara](#). 2022. "Human Latent Metrics: Perceptual and Cognitive Response Correlates to Distance in GAN Latent Space for Facial Images." In ACM SAP2022
3. Kazuma Takada, Midori Kawaguchi, Akira Uehara, Yukiya Nakanishi, Mark Armstrong, Adrien Verhulst, Kouta Minamizawa, and [Shunichi Kasahara](#). 2022. Parallel Ping-Pong: Exploring Parallel Embodiment through Multiple Bodies by a Single User. ACM AHs 2022,
4. Maekawa, Azumi, Hiroto Saito, Daisuke Uriu, [Shunichi Kasahara](#) and Masahiko Inami, Machine-Mediated Teaming: Mixture of Human and Machine in Physical Gaming Experience, ACM CHI 22.
5. Daisuke Tajima, Jun Nishida, Pedro Lopes, and [Shunichi Kasahara](#). 2021, Whose touch is this? Understanding the Agency Trade-off Between User-driven touch vs. Computer-driven Touch. ACM Transactions on Computer-Human Interaction (TOCHI)
6. [Shunichi Kasahara](#) and Kazuma Takada, 2021. Stealth Updates of Visual Information by Leveraging Change Blindness and Computational Visual Morphing. ACM Transactions on Applied Perception (ACM TAP).
7. [Shunichi Kasahara](#), Kazuma Takada, Jun Nishida, Kazuhisa Shibata, Shinsuke Shimojo and Pedro Lopes . 2020, Preserving Agency During Electrical Muscle Stimulation Training Speeds up Reaction Time Directly After Removing EMS. ACM CHI '21
8. Miura, R., [Kasahara, S.](#), Kitazaki, M., Verhulst, A., Inami, M., and Sugimoto, M., 2021. MultiSoma: Distributed Embodiment with Synchronized Behavior and Perception, ACM AHs 2021, [Best Paper Award]
9. [Shunichi Kasahara](#), Jun Nishida, and Pedro Lopes. 2019. Preemptive Action: Accelerating Human Reaction using Electrical Muscle Stimulation Without Compromising Agency. ACM CHI 2019
10. [Shunichi Kasahara](#), Keina Konno, Richi Owaki, Tsubasa Nishi, Akiko Takeshita, Takayuki Ito, Shoko Kasuga, and Junichi Ushiba. 2017. Malleable Embodiment: Changing Sense of Embodiment by Spatial-Temporal Deformation of Virtual Human Body. ACM CHI 2017
11. [S. Kasahara](#), S. Nagai and J. Rekimoto, "JackIn Head: Immersive Visual Telepresence System with Omnidirectional Wearable Camera," in IEEE Transactions on Visualization and Computer Graphics, vol. 23, no. 3, pp. 1222-1234, March 1 2017.
12. [Shunichi Kasahara](#), Mitsuhiro Ando, Kiyoshi Suganuma, and Jun Rekimoto. 2016. Parallel Eyes: Exploring Human Capability and Behaviors with Paralleled First Person View Sharing. ACM CHI '16

13. [Shunichi Kasahara](#) and Jun Rekimoto. 2015. JackIn head: immersive visual telepresence system with omnidirectional wearable camera for remote collaboration. ACM VRST 2015 (\*\* Best Paper \*\*)
14. [Shunichi Kasahara](#) and Jun Rekimoto. 2014. JackIn: integrating first-person view with out-of-body vision generation for human-human augmentation. ACM AH 2014). ACM (Best Presentation Award)
15. [Shunichi Kasahara](#), Ryuma Niiyama, Valentin Heun, and Hiroshi Ishii. 2013. exTouch: spatially-aware embodied manipulation of actuated objects mediated by augmented reality. TEI 2013.

### **SELECTED TALKS**

1. Invited talk, International Conference on Embodied Cognitive Science (ECogS 2022), 2022.11.10
2. Keynote talk, ACM Symposium on Applied Perception 2022, 2022.9.22
3. Invited talk, K Forum, Kayamori Foundation of Informational Science Advancement, Takayama Gifu. 2022.08.22-24
4. Panel talk, The 5th Cybernetic Avatar Society Study Group "Multiple 'Bodies' and Legal Liability", 2022.2.16
5. Invited talk, CMU HCII Seminar Series, 2021.11.12
6. Panel talk, Cybernetic Being symposium, 2021.10.15
7. Keynote talk, Entertainment Computing (EC2021), 2021.08.30
8. Panel talk, Media ambition tokyo 2021, 2021.06.04
9. Seminar Talk, Empathic computing lab, ECL Speaker Series, 2020.9.23.
10. Keynote, This is Québec Tokyo [Mutek] 2019.12.13, Japan
11. Keynote talk, Human and Building Augmentation, AIJISA 2019 Tokyo, 2019.12.13, Japan.
12. Seminar Talk, Superception and embodiment research, Center for Neuroprosthetics & Brain Mind Institute, 2019.11.28, Campus Biotech, Switzerland
13. Talk, CHAIN Center, Academic Seminar 3th, 2019.09.17, Japan.
14. Talk, SonySXSW 2019, "Is your body yours? Technology re-defines embodiment." talk and discussion with Prof. Olaf Blanke (EPFL), 2019.03.11, Austin, US.
15. Panel talk, Innovative City Forum 2017, Art and Science Session.
16. Talk, YCAM Perception Engineering Kick-off Symposium <http://www.ycam.jp/events/2017/perception-engineering-kickoff/>

## **SELECTED EXHIBITIONS**

1. Fragment Shadow, 2023 Taiwan International Light and Shadow Art Festival, NTMoFA (National Taiwan Museum of Fine Arts), 2022.9.17 – 2023.2.12, Taiwan
2. Fragment Shadow x Silver Cloud, ANDY WARHOL KYOTO exhibition at Kyocera Museum of Art, 2022.9.17 –2023.2.12, Japan
3. Morphing Identity, The National Museum of Emerging Science and Innovation, 2022.3.18 - 2022.8.31 Japan
4. Parallel Ping-Pong at SIGGRAPH Asia 2021 Emerging Technologies
5. Morphing Identity at Sony Park Exhibition "Research for the Future of Humanity" 2021
6. Morphing Identity, Media Ambition Tokyo 2021
7. Fragment Shadow, Media Ambition Tokyo 2021
8. Fragment Shadow, Queen in the park / Ginza Sony Park, 2020, Japan
9. Fragment Shadow, Siggraph 2019, Los Angeles, US.
10. Preemptive Action, Siggraph 2019, Los Angeles, US.
11. Fragment Shadow, AUDI Q8 Japan Premiere / MoT, 2019, Tokyo Japan.
12. Fragment Shadow, SXSW 2019, Austin, US.
13. Parallel Eyes, Ginza Sony Park, 2018.12.22 - 2019.1.27, Tokyo Japan.
14. Headlight, Siggraph 2018, Vancouver, Canada.
15. Headlight, SXSW 2018, Austin, US.
16. Parallel Eyes, SXSW 2017, Austin, Texas
17. Parallel Eyes, TOKYO GAME SHOW 2016, Japan

## **LECTURE**

1. Guest lecture, Musashino Art University Visual Communication Design, 2022.11.7
2. Guest lecture, Musashino Art University Visual Communication Design, 2021.10.18
3. Lecture, "TouchDesigner as an integrated tool in the research scene" at Tokyo Developers Study Weekend, 2021,6,6
4. Guest lecture, Meiji University, Department of Frontier Media Science, Advanced Media Colloquium, 2021.01.26,
5. Guest lecture, KMD Theory and Strategy Course, Physical Interaction, 2020.11.26.

6. Guest lecture, Department of Information Engineering, Faculty of Science and Technology, Keio University, 2020.10.30,.
7. Guest lecture, Department of Intermedia Art and Science, Media and Cognition, 2019.11.12, Waseda University, Japan.
8. Lecture Talk, Body Informatics Seminar, 2019.10.10, Center for Advanced Science and Technology, University of Tokyo, Inami/Hiyama Lab, Japan.
9. Lecture, Department of Intermedia Art and Science, Media and Cognition, 2018.11.6, Waseda University, Japan.
10. Lecture, Department of Intermedia Art and Science, Human Media Technology, 2015.10.20, Waseda University, Japan.

### **SELECTED AWARDS**

1. Innovative Technologies 2021 Prize, Morphing Identity
2. Best Demonstration Award, Siggraph Asia 2022.
3. Best Paper Award, Augmented Humans 2021
4. Laval Virtual Grand Prize at ACM SIGGRAPH 2019 Emerging Technologies.
5. SXSW Creative Experience "Arrow" Awards 2019, Best Use of Technology Award, 2019.
6. Best Paper Award: ACM VRST '15
7. Award for Excellence, VRC Award 2015.
8. Best Presentation Award, Augmented Human 2014
9. Best Demo Honorable Mention: ACM UIST 2014
10. Best paper Award, INTERACTION 2014
11. Best demonstration Award, INTERACTION 2014
12. Jury Selections, Japan media festival 2013
13. Emerging Technologies Prize, SIGGRAPH ASIA 2012

### **PATENTS**

90 Japanese patents and 14 patents in International

JP-2019079056-A, JP-2018085118-A, JP-2017022782-A, JP-2018046430-A, JP-2016177834-A, JP-2016189195-A, JP-2016129050-A, JP-2016029591-A, JP-2015181314-A, JP-2015215911-A, JP-2015172939-A, JP-2015149634-A, JP-2015095147-A, JP-2015095802-A, JP-2013205896-A, JP-2013207356-A, JP-2013200793-A, JP-2013200775-A, JP-2013164696-A, JP-2013165366-A, JP-2013164697-A, JP-2013125379-A, JP-2013105454-A, JP-2013105312-A, JP-2013105311-A, JP-2013105310-A, JP-2013105253-A, JP-2013105285-A, JP-2013105238-A, JP-2013101248-A, JP-2013080326-A, JP-2013008127-A, JP-2013003650-A, JP-2013003647-A, JP-2012252437-A, JP-2012253483-A,

JP-2012247960-A, JP-2012247936-A, JP-2012247938-A, JP-2012247911-A,  
JP-2012244463-A, JP-2012243077-A, JP-2012243076-A, JP-2012231245-A,  
JP-2012226529-A, JP-2012221249-A, JP-2012221250-A, JP-2012221107-A,  
JP-2012221108-A, JP-2012212345-A, JP-2012212346-A, JP-2012212343-A,  
JP-2012208439-A, JP-2012181613-A, JP-2012134849-A, JP-2012133085-A,  
JP-2012133543-A, JP-2012133523-A, JP-2012068495-A, JP-2012065246-A,  
JP-2012058921-A, JP-2012058882-A, JP-2012058883-A, JP-2012058881-A,  
JP-2012058920-A, JP-2012058919-A, JP-2012043060-A, JP-2012037978-A,  
JP-2012032852-A, JP-2012032853-A, JP-2011221640-A, JP-2011221606-A,  
JP-2011221605-A, JP-2011221607-A, JP-2011205562-A, JP-2011193243-A,  
JP-2011193240-A, JP-2011193123-A, JP-2011188024-A, JP-2011188023-A,  
JP-2011186537-A, JP-2011108186-A, JP-2011107912-A, JP-2011059820-A,  
JP-2011059781-A, JP-2011053974-A, JP-2011055096-A, JP-2011034127-A,  
JP-2011028560-A, JP-2011028534-A, US-11036286-B2, US-2019349525-A1,  
US-2019238793-A1, US-2017205895-A1, EP-3451674-A4, US-10679581-B2,  
US-2019132614-A1, EP-3367690-A4, US-2020260142-A1, US-10674304-B2,  
EP-3340188-A4, EP-3358836-B1, EP-3196734-B1, EP-3144775-A4,  
US-10074216-B2, EP-3070585-A4, EP-3001407-A4, EP-2983139-A4,  
EP-2983138-A4, EP-2983140-A4, EP-3550527-B1, EP-2833627-A1,  
EP-2833321-A1, EP-2814000-A1