

Virtual Environments 2024

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Table of Contents

Haptics

- egve.20241353 | Representation of Humidity Change Based on Heating the Local Skin
Yoshihiro Kuroda, Shogo Tamaki, Jiayi Xu, Shoichi Hasegawa, and Naoto Ienaga
- egve.20241354 | The Influence of a Prop Mass on Task Performance in Virtual Reality
Lucas Thomesse, Julien Cauquis, Etienne Peillard, Lionel Dominjon, Thierry Duval, and Guillaume Moreau
- egve.20241355 | Insights from an Experiment Investigating the Relationship between the Effect of Electrical Stimulation of the Ankle Tendons and the User's Biological Structure, Gender, or Age
Takashi Ota, Hideaki Kuzuoka, Tomohiro Amemiya, and Kazuma Aoyama
- egve.20241356 | Towards Environment- and Task-Independent Locomotion Prediction for Haptic VR
Shokoofeh Varzandeh, Khrystyna Vasylevska, Emanuel Vonach, and Hannes Kaufmann

Avatar

- egve.20241357 | Priming and personality effects on the Sense of Embodiment for human and non-human avatars in Virtual Reality
Darragh Higgins, Rachel McDonnell, Jean-Marie Normand, and Rebecca Fribourg
- egve.20241358 | Character-Voice Embodiment Impacts on the Cognitive Task Performance with the Voice Ownership Illusion.
Yusuke Kunimi, Kenta Kimura, Keigo Matsumoto, Shinnosuke Takamichi, Takuji Narumi, and Masaaki Mochimaru
- egve.20241359 | Psychophysical Analysis of Delay Detection in a VR Avatar's Standing-up Motion
Muhammadolim Olimov, Yuta Goto, and Shogo Okamoto
- egve.20241360 | Effect of Physical Extension on the Range of Demonstrative Indicators by Wearing Non-Humanoid Avatars with Different Looks
Takayoshi Yamada, Moeki Horii, Tadashi Ebihara, Naoto Wakatsuki, and Keiichi Zempo
- egve.20241361 | Empathy in Virtual Agents: How Emotional Expressions can Influence User Perception
Sebastian Rings, Susanne Schmidt, Julia Janßen, Nale Lehmann-Willenbrock, and Frank Steinicke
- egve.20241362 | XR remote dialogue system presenting speaker's expression using a real-space avatar robot
Yuto Yoneda, Yukiya Ojima, Yosuke Fukuchi, Vibol Yem, Yasushi Ikei, and Nobuyuki Nishiuchi

Table of Contents

Training and Augmentation

- egve.20241363 | Analysis of Tennis Forehand Technique using Machine Learning
Peter Kán, Georg Gerstweiler, Anna Sebernegg, and Hannes Kaufmann
- egve.20241364 | Preliminary Analysis of Emergency Vehicle Driving Behavior in Traffic Signal Violation Scenarios using a VR Simulator
Takuma Sudou, Sota Inoue, Shingo Yamaguchi, Shouhei Nagata, and Hirotake Yamazoe
- egve.20241365 | A Study on Improving Attention Redirection in Complex Systems Using Augmented Reality Cues
Etienne Peillard, Clémence Cunin, Gilles Coppin, and Thierry Duval

Rendering and Sensing

- egve.20241366 | BlendPCR: Seamless and Efficient Rendering of Dynamic Point Clouds captured by Multiple RGB-D Cameras
Andre Mühlbrock, Rene Weller, and Gabriel Zachmann
- egve.20241367 | Learning-based Event-based Human Gaze Tracking with Blink Detection
Mao Kanno and Mariko Isogawa
- egve.20241368 | High-Speed Vision-Based Haptic Sensor for Robotic Dermatological Palpation: Force Sensing Method Using Asymmetric Stiffness Coefficient Matrix
Fumihiko Kato, Miaohui Shi, Kaito Kamishima, and Hiroyasu Iwata
- egve.20241369 | Tutorial Generation For Virtual Reality from Example Playtroughs
Saeed Safikhani, Dorian Lux, Dieter Schmalstieg, and Johanna Pirker

Modality

- egve.20241370 | An Exploration of the Effects of in-VR Assessment Format on User Performance and Experience
Pedro Acevedo, Angela L. Jimenez, Alejandra J. Magana, Bedrich Benes, and Christos Mousas
- egve.20241371 | Do we study an archaeological artifact differently in VR and in reality?
Maxime Dumonteil, Valérie Gouranton, Marc Macé, Théophane Nicolas, and Ronan Gaugne

Table of Contents

- egve.20241372 | An Asymmetric Multiplayer Augmented Reality Game with Spatial Sharing of a Physical Environment
Yuki Sawanobori, Taishi Iriyama, and Takashi Komuro
- egve.20241373 | Seamless Multi-Modal Transitions between Real and Virtual Environments Using a Physical Door Enhances Presence and User Engagement
Takara Fujisawa, Daiki Hagimori, Monica Perusquía-Hernández, Naoya Isoyama, Hideaki Uchiyama, and Kiyoshi Kiyokawa
- egve.20241374 | Extension of Wearable Olfactory Display for Multisensory VR Experience
Zhe Zou, Dani Prasetyawan, Hsueh Han Wu, Kelvin Cheng, and Takamichi Nakamoto

Navigation and VRUI

- egve.20241375 | Using Simulated Real-world Terrain in VR to Study Outdoor AR Topographic Map Interfaces
Hiroshi Furuya, Zubin Choudhary, Jasmine Joyce DeGuzman, Matt Gottsacker, Gerd Bruder, and Greg Welch
- egve.20241376 | Examining the Effects of Teleportation on Semantic Memory of a Virtual Museum Compared to Natural Walking
Zubin Datta Choudhary, Laura Battistel, Raiffa Syamil, Hiroshi Furuya, Ferran Argelaguet, Gerd Bruder, and Greg Welch
- egve.20241377 | Influence of Virtual Reality Setup on Locomotion Technique Usage during Navigation with Walking, Steering and Teleportation
Hugo Brument, Renate Zhang, and Hannes Kaufmann
- egve.20241378 | Conversational Agent for Procedural Building Design in Virtual Reality
Matteo Bosco, Peter Kán, and Hannes Kaufmann

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Author Index

- Acevedo, Pedro 1370
Amemiya, Tomohiro 1355
Aoyama, Kazuma 1355
Argelaguet, Ferran 1376
Battistel, Laura 1376
Benes, Bedrich 1370
Bosco, Matteo 1378
Bruder, Gerd 1375, 1376
Brument, Hugo 1377
Cauquis, Julien 1354
Cheng, Kelvin 1374
Choudhary, Zubin Datta 1375, 1376
Coppin, Gilles 1365
Cunin, Clémence 1365
DeGuzman, Jasmine Joyce 1375
Dominjon, Lionel 1354
Dumonteil, Maxime 1371
Duval, Thierry 1354, 1365
Ebihara, Tadashi 1360
Fribourg, Rebecca 1357
Fujisawa, Takara 1373
Fukuchi, Yosuke 1362
Furuya, Hiroshi 1375, 1376
Gaugne, Ronan 1371
Gerstweiler, Georg 1363
Goto, Yuta 1359
Gottsacker, Matt 1375
Gouranton, Valérie 1371
Hagimori, Daiki 1373
Hasegawa, Shoichi 1353
Higgins, Darragh 1357
Horii, Moeki 1360
Ikei, Yasushi 1362
Inoue, Sota 1364
Iriyama, Taishi 1372
Isogawa, Mariko 1367
Isoyama, Naoya 1373
Iwata, Hiroyasu 1368
Janßen, Julia 1361
Jimenez, Angela L. 1370
Kamishima, Kaito 1368
Kán, Peter 1363, 1378
Kanno, Mao 1367
Kato, Fumihiko 1368
Kaufmann, Hannes 1356, 1363, 1377, 1378
Kimura, Kenta 1358
Kiyokawa, Kiyoshi 1373
Komuro, Takashi 1372
Kuroda, Yoshihiro 1353
Kuzuoka, Hideaki 1355
Kunimi, Yusuke 1358
Lehmann-Willenbrock, Nale 1361
Lux, Dorian 1369
Macé, Marc 1371
Magana, Alejandra J. 1370
Matsumoto, Keigo 1358
McDonnell, Rachel 1357
Mochimaru, Masaaki 1358
Moreau, Guillaume 1354
Mousas, Christos 1370
Mühlenbrock, Andre 1366
Nagata, Shouhei 1364
Nakamoto, Takamichi 1374
Ienaga, Naoto 1353
Narumi, Takuji 1358
Nicolas, Théophile 1371
Nishiuchi, Nobuyuki 1362
Normand, Jean-Marie 1357
Ojima, Yukiya 1362
Okamoto, Shogo 1359
Olimov, Muhammadolim 1359
Ota, Takashi 1355
Peillard, Etienne 1354, 1365
Perusquía-Hernández, Monica 1373
Pirker, Johanna 1369
Prasetyawan, Dani 1374
Rings, Sebastian 1361
Safikhani, Saeed 1369
Sawanobori, Yuki 1372
Schmalstieg, Dieter 1369
Schmidt, Susanne 1361
Sebernegg, Anna 1363
Shi, Miaohui 1368
Steinicke, Frank 1361
Sudou, Takuma 1364
Syamil, Raiffa 1376
Takamichi, Shinnosuke 1358
Tamaki, Shogo 1353

Author Index

Thomesse, Lucas	1354	Yamada, Takayoshi	1360
Uchiyama, Hideaki	1373	Yamaguchi, Shingo	1364
Varzandeh, Shokoofeh	1356	Yamazoe, Hirotake	1364
Vasylevska, Khrystyna	1356	Yem, Vibol	1362
Vonach, Emanuel	1356	Yoneda, Yuto	1362
Wakatsuki, Naoto	1360	Zachmann, Gabriel	1366
Welch, Greg	1375, 1376	Zempo, Keiichi	1360
Weller, Rene	1366	Zhang, Renate	1377
Wu, Hsueh Han	1374	Zou, Zhe	1374
Xu, Jiayi	1353		

Keynote

The Impact of Virtual Reality in Psychiatric Treatment: Is VR the Dawn of a New Era in Mental Health?

Keiko Ino, National Center of Neurology and Psychiatry

Abstract

In recent years, the use of virtual reality (VR) in the treatment of mental disorders has been researched internationally. Cognitive Behavioral Therapy, a treatment for mental disorders, makes use of methods including role-playing anxiety-triggering situations for patients with social phobia, and for those with PTSD, revisiting traumatic memories through visualization and discussion. Efforts are underway to combine these approaches with VR to create more impactful treatments. However, using VR for medical purposes presents various difficulties, and it has not become widespread clinically. This keynote will introduce these efforts and researches, discussing how VR may revolutionize psychiatric treatment and the difficulties it faces.

Short Biography

Since 2021, Keiko Ino has served as the Section Chief at the National Center of Neurology and Psychiatry's Institute of Mental Health, conducting research on treatments for Post-Traumatic Stress Disorder (PTSD). She specializes in Cognitive Behavioral Therapy, particularly in Prolonged Exposure Therapy for PTSD, and holds a consultancy certification in this treatment method.

Keynote

Narrative Turn in Human Augmentation with Avatars: Connecting Minimal Self Transformations to Narrative Self Development

Takuji Narumi, The University of Tokyo

Abstract

The experience of embodying avatars with distinct characteristics from one's actual body in virtual reality has been shown to transform self-perception, affecting sensory experiences, behaviors, thinking and capabilities. The speaker has been conducting research on technologies that help individuals achieve their desired cognitive states and abilities by actively utilizing these transformative effects. Through this research, it has become evident that for such technologies to be accepted by users and society, it is crucial not only to develop technologies that augment human capabilities through instantaneous self-transformation but also to create systems that provide meaningful narratives, contextualizing these augmented selves within users' lives. This keynote will emphasize the importance of considering "narrative self," which involves personal identity and continuity across time, in discussions of human augmentation. It will present case studies that explore the relationship between avatar-based self-transformation and narrative self-development, and discuss future directions for research in virtual reality and tele-existence.

Short Biography

Prof. Dr. Takuji Narumi is an associate professor at the Graduate School of Information Science and Technology, the University of Tokyo. His research interests lie at the intersection of technology and human science, focusing on extending human senses, cognition, capabilities and communication by combining virtual and augmented reality technologies with insights from psychology and cognitive science. He has received numerous awards, including the Young Researcher Award from the Minister of Education, Culture, Sports, Science and Technology, the IPSJ/IEEE Computer Society Young Computer Researcher Award, the SIGCHI Japan Chapter Distinguished Young Researcher Award, and the Excellence Award of the Japan Media Arts Festival.

Keynote

Antenna: Socialization of Co-Design with the Deaf and Hard of Hearing

Tatsuya Honda, FUJITSU LIMITED

Abstract

Antenna is a wearable device that converts sound intensity into real-time vibrations and light, transmitting features like rhythm and volume. It has been adopted by over 80% of schools for the deaf in Japan, where it is used for rhythm and speech training. In addition to the story of how this product was developed from university research to commercialization, we are also introducing a new co-creation project called “Eki-matope,” which uses AI to translate ambient station sounds into text, sign language, and onomatopoeia.

Short Biography

Tatsuya Honda is a UI designer and project leader of Antenna. At university he volunteered as a sign language interpreter and established a sign language club and NPO. From his graduation research he started working with deaf people on Antenna, a device to perceive new sounds, based on the theme of extending the human body and senses. Antenna has since been commercialized and is now used in 80% of the schools for the deaf in Japan. Tatsuya hopes to use design and technology to create more smiles in society. His awards include the MIT Innovators Under 35 Japan and Forbes 30 Under 30 Asia.