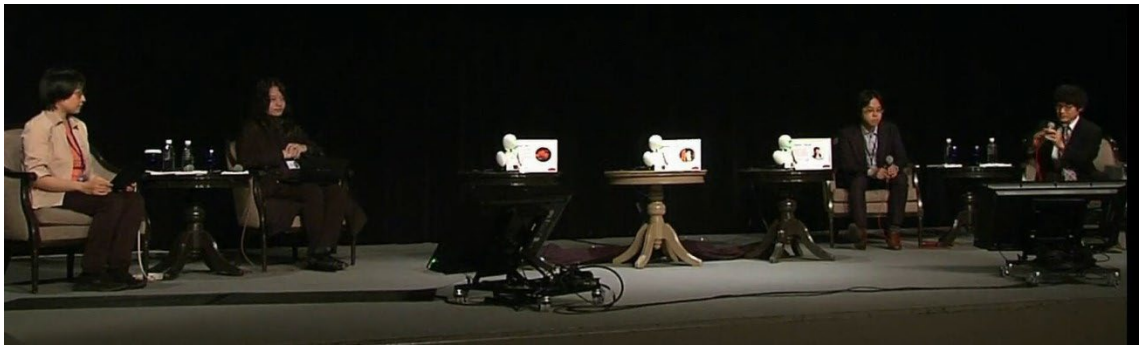
GPAI SUMMIT 2022 "The Future of Work" Side Event
-Challenges and Issues for Diverse Societies and Work Styles: Co-Creation of AI/Avatars and Human

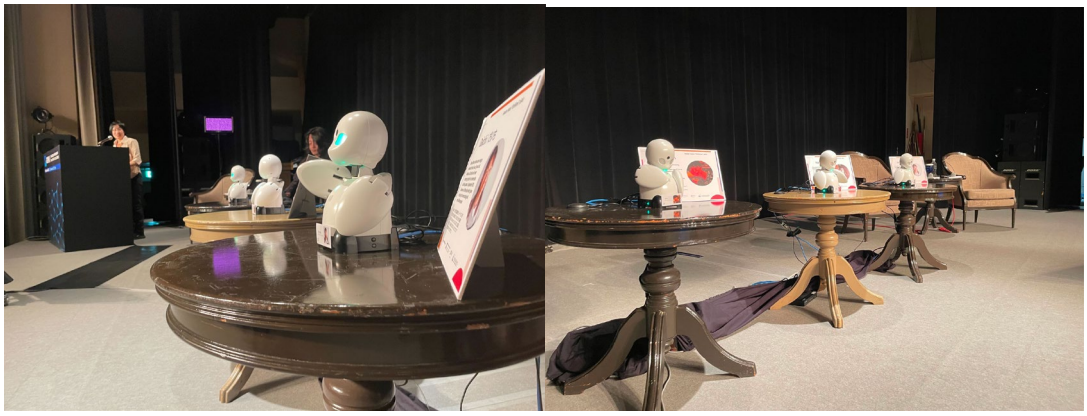
Date: Tuesday, November 22, 2022
Time: 10:30-12:00 (JST)
Venue: Hotel Chinzan-so Tokyo and online webinar (hybrid)
Host: Institute for Future Initiatives, The University of Tokyo
Co-host: JST Moonshot R&D Project, "Cybernetic being" Project



On stage at the event: from left, Dr. Ema, Mr. Yoshifuji, Yui (OriHime pilot), Naoki (OriHime pilot), Daichi (OriHime pilot), Dr. Minamisawa, and Mr. Idei

Established in June 2020, the Global Partnership on AI (GPAI) is an international initiative dedicated to the responsible development and use of "human-centric" AI. The GPAI has four working groups, including one discussing the "Future of Work."

Held as a side event of the GPAI Summit, this event discussed the future possibilities and challenges of co-creating work with people, AI, and robots. Three people who actually work as robot avatar operators (hereinafter referred to as "pilots") at the Avatar Robot Café DAWN ver. β (hereinafter referred to as "Avatar Robot Café") took the stage from the robot avatar OriHime, and the actual voice working inside the robot was broadcast.



OriHime robot on stage

First, Mr. Kentaro Yoshifuji, Director of the Ory Laboratory that operates the Avatar Robot Cafe, gave an introduction to the Avatar Robot Cafe and OriHime under the topic "Avatar Robot Cafe and the Future of Work."

At the avatar robot café, which opened in Nihonbashi, Tokyo in June 2021, people who have physical and mobility difficulties can work by remotely operating the avatar robots OriHime and OriHime-D. In Japan, the average life expectancy is increasing every year, but the gap between average and healthy life expectancy is approximately 10 years, indicating that many people will eventually become bedridden. Mr. Yoshifuji stated that even with such physical and mobility limitations, OriHime will allow people to freely go anywhere they want to in the future. He also mentioned that an increasing number of companies visiting the café have seen pilots working with OriHime and offered them jobs, while some people made the decision to live with OriHime as a result of using it. His talk was full of hope for a future in which people would be able to work and live their own lives without physical or mobility limitations using robot avatars.

Next, Dr. Kouta Minamisawa of the Keio University Graduate School of Media Design, and project manager of the JST Moonshot R&D project "Cybernetic being," spoke on the topic of "Cybernetic Avatar and the Future of Work."

In recent years, as people discuss working in the metaverse and various companies develop robotic avatars, there is growing possibility that these robotic avatars can provide a new option for overcoming disabilities.

Dr. Minamisawa provided an overview of the Moonshot project regarding (1) Cognitive Augmentation, (2) Parallel Agency & Experience Sharing, and (3) Collective Abilities. Cognitive Augmentation is a technology that can draw out the abilities of an operator by harnessing the mental and behavioral changes that occur when the robot avatar is controlled. Parallel Agency & Experience Sharing is a technology that enable multiple experiences at the

same time, and Collective Abilities is a technology that enables the fusion of multiple people's skills to demonstrate skills beyond their individual capabilities.
In addition to an overview of the project, Dr. Minamisawa also touched on past demonstrations conducted at the avatar robot café.

Next, Mr. Hajime Idei, an attorney at the Kotto Dori Law Office and Assistant Counselor at the Intellectual Property Strategy Secretariat of the Cabinet Office, discussed the legal issues that could arise from using robot avatars.

While using robotic avatars provides the advantage of being able to work at any time, this advantage may lead to labor law issues. Working with robotic avatars may be regarded as freelance work, and issues that may arise from this must be considered. In addition, when introducing a form of work with robot avatars from overseas, the issues of governing law and jurisdiction must also be considered, and issues related to the employment of people with severe disabilities by local governments were also raised. The talk suggested the need to be aware of legal issues when considering how to work with robot avatars.

A panel discussion followed, moderated by Dr. Arisa Ema, an expert member of the GPAI Future of Work and University of Tokyo, including previous presenters Daichi, Naoki, and Yui, who are working as OriHime pilots at the avatar robot cafe.

First, Dr. Ema asked about the differences between Zoom and other online meeting systems and OriHime.

Each of the pilots gave a response to the question. Yui stated that OriHime differs from Zoom in that it has a wide range of neck movements and can make eye contact, nod, and engage in conversation. Naoki said that with Zoom and other similar technologies, people can see their physical condition and may have preconceived notions of "feeling sorry;" however, with OriHime, it is easier for people to know themselves because they cannot see their bodies. Daichi also added that OriHime could move its arms, which is difficult to do with a real body.

Mr. Yoshifuji, who designed OriHime, emphasized that there was room for imagination because of the small amount of information. He said that OriHime is designed to converge with a person's image as he or she speaks.

Dr. Minamisawa stated that having a new body like that of a robot avatar like OriHime, increases interaction with society and that OriHime is one of the interfaces that can provide such contact with society. In response, Dr. Ema pointed out that one of the goals of the Moonshot project, "interaction design," could benefit significantly from OriHime.

Mr. Idei stated that robot avatars are already becoming like another body, and that the current way of thinking about robots as tools or possessions should be changed, and a new

way of protection should be applied. He also mentioned the importance of employers and employees working together to find an ideal way to work.

Next, Dr. Ema asked how we would address the concern that, while the proliferation of robot avatars would be positive in terms of easier multitasking, it would also lead to busyness and exhaustion, as people would work both in the flesh and with avatar robots in the pursuit of efficiency.

In response to such concerns, Mr. Yoshifuji mentioned one of the ironclad rules at the avatar robot café: “Take it easy.” At the avatar robot café, if a worker feels a little unwell or that they are too busy, they can take a day off immediately. As OriHime has the advantage of being able to operate and work remotely, it is easy to create a system where if someone takes a day off, someone else can take his or her place immediately. This kind of mutual support is common at the avatar robot café. Mr. Yoshifuji also mentioned that "getting busy = making way for the next person.” He presented the view that being busy is not a bad thing in the sense that more work can be delegated to others, and more places can be created for many people.

Dr. Minamisawa stated that our views will change depending on how we use robot avatars. Because their positive and negative aspects will change depending on how robot avatars are used, it is important to think concretely about the future possibilities through collaboration with science fiction and other means, identify the issues that arise, and consider the meaning of well-being.

Mr. Idei spoke about the need to consider a future in which we could live in harmony with robot avatars while protecting our individuality. He then presented the effectiveness of "sandbox regulations," in which certain regulations are lifted on an experimental basis for trial and error.

The pilots also discussed the various ways of working. Daichi stated that the number of options is an important consideration, as everyone has different ideas about how to work. Naoki also discussed how he valued his own personal hospitality in serving customers, and shared some of the wonderful interactions he had with customers at the café while serving, stating that he enjoys interacting with customers every day. Finally, Yui discussed how OriHime had relieved her of the physical burden of commuting to work, and how happy she was to be able to work as a customer service representative, a job she had given up due to her illness.

At the end of the panel discussion, there were two audience questions.

The first question was on how to handle cybersecurity and robot avatar hijacking. Mr. Yoshifuji gave an example of a person using OriHime to participate in an important meeting and said that they prevented hijacking by ensuring that only the person in charge of the

meeting was shown the face of the robot avatar operator.

On the other hand, Dr. Minamisawa mentioned that deep fakes have developed remarkably in recent years, increasing the risk of interference with one's social identity, and he stated that it is important to ensure the reliability and safety of the physical information generated by each individual. However, specific protection methods are still being explored, and he stressed the need for further study. Dr. Minamisawa also stated that it is necessary to consider the boundary between humans and AI in anticipation of the evolution of robot avatars and the arrival of an era in which AI will assist some of the functions of the human body.

Mr. Idei pointed out that hijacking is currently occurring with social networking accounts; however, in the case of robot avatars, it is not just an online problem. He then spoke from the perspective of the importance of a balance between protection and utilization, as countermeasures include disclosing user information, but privacy must also be considered. On the other hand, Mr. Idei stated that it is impossible for only the operator of a robot avatar to determine the credibility of all data and that each of us must be able to judge whether the information is trustworthy. In general, he noted that it is necessary to strike a balance between what should be available and what should be kept secret regarding robot avatars; however, for jobs that require qualifications, such as doctors, it is necessary to be open about who is operating the robot.

The second audience question asked about the level of protection for employing persons with disabilities. Mr. Idei stated that the current uniform protection should be customized to individuals and the way they work, but also spoke of the difficulties in achieving this.

Dr. Minamisawa mentioned that well-being in the physical body and social activities should be considered separately.

Finally, Mr. Yoshifuji discussed the prospects for OriHime.
In order to realize a society where the right person is in the right place at the right time, he stated that he would continue to create "a place where you feel it is okay to be, a place where you belong." The event ended with a strong message that he would continue to increase the number of jobs and roles to build a society in which everyone felt they are needed.

It was impressive that many of the audience members continued to gather around the OriHime robot on stage after the event, enjoying conversation with the pilots. It was an event that made everyone feel that a future where working with robot avatars is taken for granted as an option, and everyone can work as they please, may not be too far away.

Audience members talking with the pilot on stage after the event.

(Prepared by Manaka Karino)