

## Making eye-contact with people in teleconferences

∼Social telepresence with eye-contact using kinetic avatars ~

## Abstract

In video conferences, the inability to make eye contact with remote partners has been a major obstacle for natural communication for many years, unlike in face-to-face settings. This exhibit introduces a novel experimental system called "MMSpace," which can be used in research on finding design principles for better telecommunications. To enhance nonverbal communications exchanged with head motions, MMSpace incorporates a kinetic display avatar that can change its pose and position in synchronization with human head motions, and a newly integrated mechanism allow users to make eye contact with remote partners. Multiple kinetic avatars are configured to construct symmetric multi-to-multi conversation spaces so that users can naturally participate in spatially separated multiparty conversations, closer to face-to-face settings. Research using MMSpace is expected to lead to advanced telepresence systems and tools for communication science.

-Feature 1: MMSpace targets multi-to-multi remote conversations and allows participants to talk with remote partners like in face-to-face settings, due to the spatially consistent configuration of users' avatars that show the faces of remote users.



-Feature 2: Highly maneuverable kinetic avatars in terms of accuracy, latency, and silent mechanics can enhance nonverbal communications between remote places.



Projection mapping on semi-transparent panel displays remote user's face right in front of you

Panel pose/position dynamically changes in synchronization with human head motions, e.g. nodding, and shaking.



Kinetic avatars outperform static avatars in terms of

Understanding of reaction

Sense of mutual understanding

Ease of knowing others' gaze directions, facial expressions, and gestures

♦Eye contact

Sense of close presence of partners

-Feature 3: Virtual eye contact through avatars- you can talk to the eyes of a partner.



(3)

In response, addressee looks back to speaker's avatar, and then mutual eye contact among the two can be established through both avatars.

## [Reference]

[1] K. Otsuka, "MMSpace: Kinetically-augmented telepresence for small group-to-group conversations," in Proc. IEEE Virtual Reality 2016 (VR2016), pp. 19-28, March, 2016

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