

# 論文の内容の要旨

## 論文題目：Human Augmentation by Inter Personal Communication with First Person Visual Media

(一人称映像コミュニケーションによる人間拡張に関する研究)

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As the nature of communication between persons, we have been having a desire to share own experience what we do and to experience what others do. Those understanding what we see, hear, do and feel each other is foundation of all of various inter personal communication including, assistance, remote collaboration, experience sharing and broadcasting.

One of the fundamental demands of communication between humans is the desire to share what we are experiencing and to feel what others are experiencing. These are essential parts of various activities related to communication. As a means of communication, human beings can use various digital media according to technology as well as language media, and the form of communication has also changed accordingly.

Especially, the first-person perspective media that wearable and network technologies are about to bring has huge potential as media that can share own experiences themselves. However, unlike conventional video media communication, it is necessary to solve the technical problem due to movement of image from wearable devices, and also requires different communication design.

The aims of this research are to solve technical problems for inter personal communication with the first person view (FPV) media and to explore and propose design framework for communication.

In this thesis, I introduce communication systems using FPV media for remote collaboration and sharing experience. Then I explore and propose 1) the image processing, visualization and interaction technique for first person video, 2) the hardware design, image processing for first person omnidirectional image for sharing experience and the design of real-time communication. The core of the design of visual communication is decomposing the visual media and the first person embodiment from the first person visual media. Then I also explore 3) human behavior in the multiple shared first person visual with the realtime FPV exchange system.

I present the result of evaluation on how the proposed system solves the technical problems including visual induced sickness and spatial understanding for remote communication. Then, we derive the design of the inter personal communication system with first person visual media based on experiments on remote collaboration and live streaming.

By developing a series of FPV media research and discussion, I will provide possibilities of the first person media and a more comprehensive design framework for inter personal communication.