Intra-expo: Augmented Emotion By Superimposing Comic Book Images

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ABSTRACT

This paper proposes a method for conveying emotions in face-to-face communication by superimposing comic book images on real world using augmented reality technology. We implemented a system named "Intra-expo" that superimposes comic book images which influence our estimation of emotional state around the user. In order to build the system, we analyzed how subjects estimated the emotional state of a person when the person's image was superimposed on various comic book images. We then constructed a prototype of Intra-expo, which detects the user using the Microsoft Kinect system and projects different comic book images around the user, who selects their emotional state using an Apple iPhone as a mobile interface.

KEYWORDS: Conveying Emotion, Augmented Reality, Comic Book Images, Face-to-face Communication.

1 INTRODUCTION

Research on conveying emotion by using computer technology has become an active topic in recent years [1]. There are many approaches for conveying emotional states by using abstractly symbols, such as color or sound tone [2]. The practices of these approaches have been advanced in study to conveying emotion via online communication, but are rarely used in face-to-face communication. We propose a system named "Intra-expo" to convey emotion in face-to-face communication by augmenting emotion on real world. We focused on comic book images as a means of describing emotional states, because they are effectively used to describe the emotional states of characters in comics [3].

2 "INTRA-EXPO": AUGMENTED EMOTION BY SUPERIMPOSING COMIC BOOK IMAGES ON THE REAL WORLD

Firstly, we experimented to analyze how each of some comic book images has been generally-regarded as to be able to describe a certain emotional state and whether there are some comic book images which can describe a certain emotional state effectively. We analyzed 25 comic book images and some emotional states. The results are shown in Figure 1.

Next, we implemented a system named "Intra-expo." The system superimposes an appropriate comic book image around the user by projection the image, which describes the emotional state selected by the user, while remaining focus on the user's partner in face-to-face communication. "Intra-expo" has three components: a mobile interface to manually select the own emotional state, a section for user detection, and a section for projection of comic book images around the user (Figure 2). The users of "Intra-expo" said that the system enable them to convey own emotion properly.

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Figure 1. Correspondences of Comic book images used in our experiment and emotional state.

Figure 2. Scenes of superimposing comic book images describing some emotional states.

3 CONCLUSION

We proposed a method for conveying emotion in face-to-face communication using comic book images. In the future, we will establish the methods to support conveying emotional information in face-to-face communication. Especially we try to examine ways of conveying emotion in real world without user's operation of devices.

REFERENCES

[1] R.W. Picard. 2007. Affective Computing. *MIT Press*.

[2] Shimura, S.. Hirano, Y., Kajita, S. and Mase, K. 2005. Experiment of Recalling Emotions in Wearable Experience Recordings. In *Proceedings of the 3rd International Conference on Pervasive Computing*(May). 19-22.

[3] McCloud, S. 1990. Understanding Comics: The invisible Art. *Harper Parerbacks*.

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