Illusory Interactive Performance by Self Eye Movement

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Abstract

Media performance unit cell/66b uses images, sounds and sensor devices to expand the performance potential of the body. Ongoing inquiry goes into the interaction between stage and audiences. Stage performances are generally designed to present images in one way, namely from stage to audience. Audiences basically see the same scenery of the performances on the stage, though there may be some differences between their positions. The concept of our performance, however, is to make the stage more interactive (i.e. the stage could be composed to include audiences) so that audiences could have a more individualized experience. Consequently, we realized an illusory interactive performance by using a saccade-based display. In our stage, audiences can perceive different images according to their eye movements, even if performers move in the same way. Thus, their own actions make the scene more interactive than what physically exists.

1 Performance with Saccade-based Display

The saccade-based display can present 2D images without any screen using only a single line of flickering LEDs. When a flickering light array moves at a fast enough speed, we can perceive 2D images through retinal afterimages as in fig. 1a. Conversely, when we make a rapid eye movement called a saccade, we can also perceive 2D images when the flickering light array is fixed and the eyeball rotates fast enough. The retinal image drawn by the saccade is relatively the same as when the light array moves physically (see fig. 1b). Additionally, the shape of perceived images are different according to their own eye movements.

2 Conclusion

Using the saccade-based display, the audience can perceive different images from what physically exists on the stage. The display enables the illusory interactive performance based on audiences’ eye movements, and makes the stage an original experience for each audience.

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