

Neighbors' Shadow: Moderate Communication with Familiar Strangers

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ABSTRACT

We have installed a public interactive system to encourage communication between familiar strangers in offices, schools, and apartment buildings. This system takes the shadows of users waiting at an elevator hall and generates funny animation using them.

Keywords

familiar stranger, communication, ambient, shadow

1. INTRODUCTION

In schools, offices, and apartment buildings, there are many unfamiliar neighbors. We do not have much opportunity to communicate with them, because many of them frequent common meeting places such as an elevator hall at different times. Milgram termed these neighbors "familiar strangers[1]." In order to encourage and stimulate conversation between familiar strangers, we have installed a public interactive system termed "Neighbors' Shadow." This system provides awareness of and sense of affinity towards neighbors by ambient visualization (i.e., shadows) of people who are living or working in the same building.

2. SYSTEM OVERVIEW

The Neighbors' Shadow system is designed to be installed at an elevator hall, i.e., in front of an elevator door in a building, as shown in Fig. 1. A screen made of a retro-reflective material and a computer projector are placed on the wall beside the elevator door. On the opposite side of the screen, we have placed an IR (infrared) camera, an IR LED grid, a color camera, and a PC. The IR LED illuminates the screen, and the IR camera captures the reflected IR light from the screen. If a person stands between the LED and the screen, his/her silhouette will be captured by the IR camera. The color camera is used to capture the color and texture of the clothes of the user. The computer projector displays virtual scenery of a grass field on the screen.

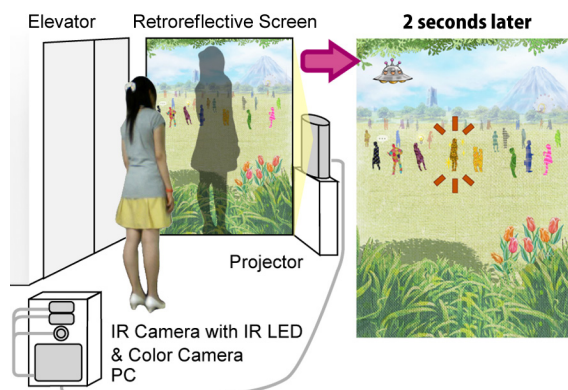


Figure 1: System overview. A screen, a projector, cameras, and a PC are installed in an elevator hall. A shadow of the user in front of the screen will be captured into the virtual world.

When a user comes and waits in front of the elevator, the Neighbors' Shadow system captures the silhouette of the user by using the IR camera, and the actual size of the user's shadow appears on the screen translucently, as shown in Fig. 1. The shadow becomes darker while the user stays motionless, and after 2 s, the shadow is finally brought to the virtual world on the screen. The shadow is, then, resized to fit in the virtual world and painted with the similar texture of the user's clothes for identification purposes.

Besides the shadow of the user in front of the elevator, there are shadows of up to 24 people on the screen, previously drawn into the virtual grass field in the past 3 h. All of these shadows animate autonomously and occasionally interact with each other. For example, two shadows ride on a spinning teacup at an amusement park and are surrounded by heart-shaped symbols to indicate intimacy. The funny autonomous animation acted by the neighbor's shadow will draw a sense of affinity towards them, naturally. We have installed the system at an actual elevator hall for evaluation and received favorable comments.

3. REFERENCES

- [1] Stanley Milgram. *The individual in a social world: essays and experiments*(Paperback). McGraw-Hill, January 1 1992.