

Cyberspace Virtual Human Emotion & Augmented Reality Crowd: Two Aspects of Emotion in Virtual Crowds

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This presentation introduces general concepts and objectives in both **CYBEREMOTIONS** and **AERIALCROWDS** projects I am managing at VRlab, EPFL.

Our team workpackage duty in **CYBEREMOTIONS** is to create a virtual society composed of virtual agents, capable of reactions, emotions, and social behavior and to develop interpersonal relationships and nonverbal communication in a virtual society. Before tackling mass emotions or resulting visual effects on the crowd itself, we focus our studies on the creation of perceptions and reactions for virtual human. The interpersonal relationships and nonverbal communication between avatars and agents is therefore one of the main topic discussed in the first part of my presentation (see Figure 1).

Our team workpackage duty in **AERIALCROWDS** is to capture aerial image captures using low cost surveillance vehicle and to simulate corresponding crowd simulation with their path planning in real-time animation. One of the main purposes is to identify crowd emotion/reaction without identifying people themselves. The second part of my presentation will then first describe the difficulties and solutions relative to aerial video capture using low cost vehicle and second briefly present recent development for the crowd reconstruction in real-time (see Figure 2).

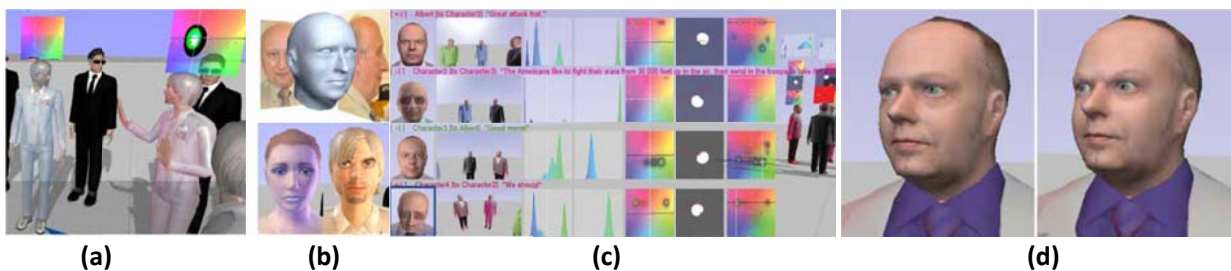


Figure 1. Metaphor of cyberspace emotion and draft of virtual society relationship: (a) avatars, agents, and emotional representation; (b) from real picture to avatar and color based emotional representation; (c) real-time interpersonal relationships and non-verbal statistical illustration of a cyberspace recorded conversation; (d) illustration of the complexity to represent subtle facial change of expression.

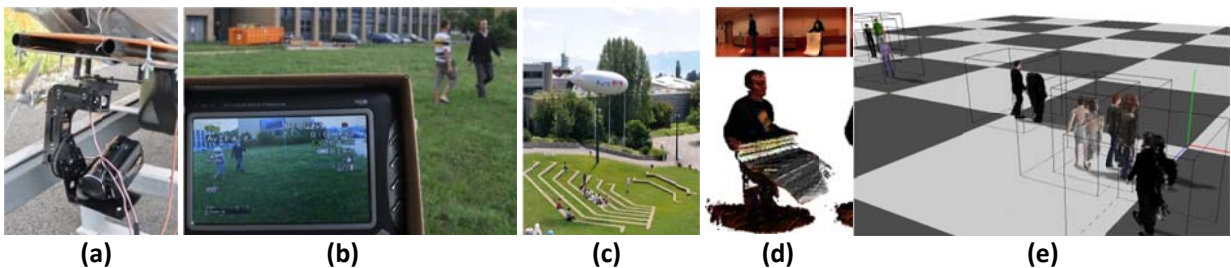


Figure 2. Aerial video capture: (a) camera hardware management under the blimp; (b) testing embedded camera real-time wireless communication; (c) recording tests with under back wind conditions, orientation of the nacelle and embedded camera had to be inverted; (d) human reconstruction; (e) virtual reconstruction of crowd.