



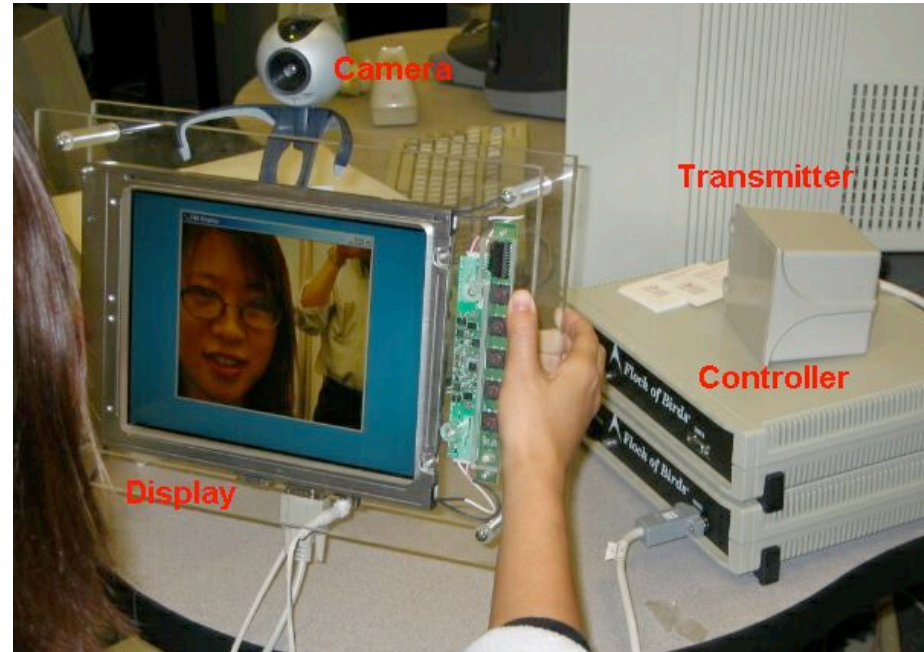
IMSC
Integrated
Media Systems
Center

INTEGRATED MEDIA SYSTEMS CENTER
A National Science Foundation
Engineering Research Center at the
UNIVERSITY OF SOUTHERN CALIFORNIA

PRINCIPAL INVESTIGATOR
Alexandre R.J. François

OTHER USC RESEARCHERS
Margaret Lazzari
G rard Medioni

Virtual Mirror



USC STUDENTS, DEGREES

Eun-Young Elaine Kang (PhD)
Umberto Malesci (Undergraduate CE/CS)

BRIEF DESCRIPTION OF DEMONSTRATION

We demonstrate a physical interaction device simulating a mirror on a handheld computer screen. The system is built around a flat LCD screen manipulated by the user, a single camera fixed on the screen, and a tracking device. The continuous input video stream and tracker data is used to synthesize, in real-time, a continuous video stream displayed on the LCD screen. The synthesized video stream is a close approximation of what the user would see on the screen surface if it were a real mirror.

UNIQUE OR DISTINGUISHING CHARACTERISTICS RELATIVE TO STATE-OF-THE-ART

Mirrors have been source of inspiration for artists for a long time, but few interactive electronic mirror experiments have actually been demonstrated. Our project aims to open the door to even more powerful experiments by providing a realistic, geometrically sound mirror simulation. A major innovation in our approach is to allow and encourage the user to freely move around, and interact with the mirror physically.

APPLICATIONS

- Virtual Daguerreotype
- Other first person user interface experiments

RECENT HIGHLIGHTS, LEVEL OF DEVELOPMENT, UPCOMING MILESTONES

- First integrated prototype completed
- Experiment different mirror-surface dynamics, such as convex mirror simulation
- More experiments utilizing the virtual mirror are in preparation

UNDERLYING TECHNOLOGIES

- Real-time interactive video processing and system integration using the MIE Software Architecture for Immersipresence

LIST OF PUBLICATIONS, REFERENCES, URLs

- A. François, E.-Y. Kang and U. Malesci, "A Handheld Virtual Mirror," SIGGRAPH Conference Abstracts and Applications proceedings, San Antonio, TX, July 2002.
- A. François, E.-Y. Kang, "A Handheld Mirror Simulation", to appear in Proceedings of the IEEE International Conference on Multimedia and Expo, Baltimore, MD, July 2003.
- A. François, Modular Flow Scheduling Middleware. <http://mfsm.sourceforge.net/>
- Virtual Mirror Homepage. <http://iris.usc.edu/~afrancoi/virtualmirror/>

For additional information, please contact the Principal Investigator listed above via email, or contact

Isaac Maya, Ph.D., P.E.
Director, Industry and Technology Transfer Programs

213-740-2592
imaya@imsc.usc.edu

Ann Spurgeon
Associate Director of Industry Programs

213-740-4877
aspurgeo@imsc.usc.edu

Integrated Media Systems Center
3740 McClintock Avenue, Suite 131
Los Angeles, CA 90089-2561
213-740-8931 (fax)

For additional information on the Integrated Media Systems Center (IMSC), please visit our Web site at <http://imsc.usc.edu>