



## Envisor - Automatic Augmented Reality

Tech ID: 10329 / UC Case 2008-061-0

### BACKGROUND

Augmented reality (AR) technologies have improved drastically in the recent years due to the advances in tracking, modeling and rendering techniques. However, these improvements often comes at the cost of increased startup costs, as these techniques require expensive hardware and careful calibration, hindering experimentation of AR by potential casual users.

### DESCRIPTION

Researchers at the University of California, Santa Barbara have developed a new system, Envisor, for automatic construction of environmental maps. The Envisor system uses commonly available components and constructs environmental maps using a hand-held camera.



*Fig.1 Cylindrical projections of acquired environment maps - constructed with a hand-held camera in approximately 3 minutes.*

### ADVANTAGES

This novel system has the following advantages:

- ▶ Allows users with standard hardware to acquire and construct environmental maps automatically;
- ▶ Robust tracking of camera for relative motion, and dynamically acquired landmarks to provide drift-free registration; and
- ▶ Provides users with onscreen feedback to avoid gaps; and
- ▶ Automatically fills gaps that users missed to improve visual impact.

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### INVENTORS

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### OTHER INFORMATION

#### KEYWORDS

indmedia

#### CATEGORIZED AS

- ▶ **Computer**
- ▶ Software

#### RELATED CASES

2008-061-0



Fig. 2: On-screen feedback in the form of arrows around the video image directs the user's acquisition. Left to right: (a) Before panning the camera, all directions need to be acquired still. (b) After the camera has completed a circular path, the left and right arrows are gone.

**"Towards Anywhere Augmentation"** S. DiVerdi, September 2007

## ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- [A Scalable Technique For Interactive Visualization Of Large Node-Link Graphic In A Web Browser](#)

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