TECHNOLOGY

Low-Cost Commodity Camera Array for Acquiring Virtual Environments

OVERVIEW

Creating effective augmented and virtual reality (AR and VR, respectively) environments requires understanding the environment that is to be augmented or created. Traditionally, designers curate an augmented environment to display the desired content. This method has been successful in controlled situations such as virtual tourism and entertainment, but not so in areas like manufacturing or medical education. These situations require scalable, high-quality 3D scene acquisition.

Researchers at the University of Maryland have developed a low-cost camera array that can capture a true-to-life realistic environment. The array consists of Raspberry Pi cameras and controllers arranged in a hexagonal layout, which allows for capture of stereoscopic video for AR and VR applications. The array can operate in two modes: as a portable camera that receives a trigger signal from an RF receiver and an RF remote control, and as a camera for telepresence.

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CATEGORIES

- Software + Algorithm
- Engineering

EXTERNAL RESOURCES

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