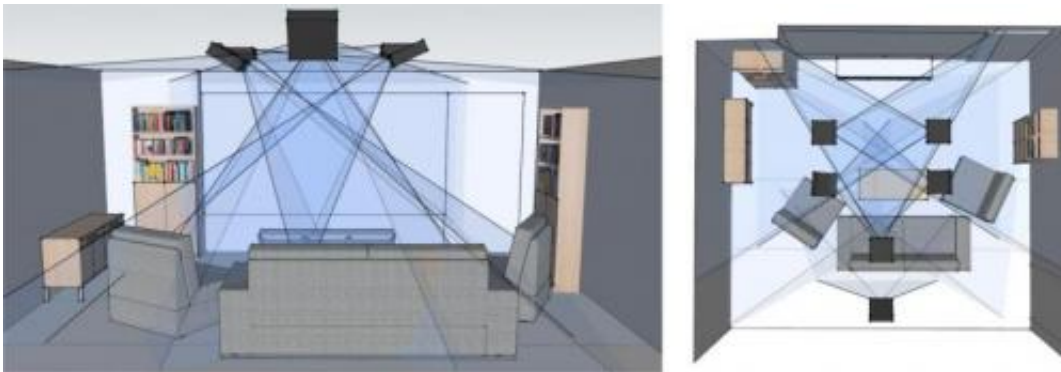


# RoomAlive: Microsoft Research team shows gaming future

October 6 2014, by Nancy Owano

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Once upon a time family entertainment meant checkers, darts and playing charades. Then came game consoles and headsets. Now a Microsoft Research effort shows RoomAlive, a proof-of-concept prototype that makes rooms immersive experiences. RoomAlive would mark a turning point for more people who generally enjoy gaming. In their paper "RoomAlive: Magical Experiences Enabled by Scalable, Adaptive Projector-Camera Units," the research team noted how "the game world is still distinctly separate from our real world. We may feel more present in the game world, but the game is not present in our world." The authors are Brett Jones, Rajinder Sodhi, Michael Murdock, Ravish Mehra, Hrvoje Benko, Andrew Wilson, Eyal Ofek, Blair MacIntyre, Nikunj Raghuvanshi, and Lior Shapira.

Their system enables interactive projection mapping that dynamically adapts content to a room. Users touch, shoot, stomp, dodge and steer projected content which exists with their physical environment.

Projector-depth camera units, or procams, are described as the basic building blocks of the system. These units are auto-calibrating, and their video indicated that the auto-calibration requires no expertise. The authors in their paper described the procam units. Each unit contains a depth-camera (which includes a color camera, infrared (IR) camera and IR emitter), a commodity wide field-of-view projector, and a computer. A single unit can be used in isolation, or multiple units can be combined to canvas an entire [living room](#) in I/O pixels. People can use natural user interactions, but RoomAlive also supports traditional physical game controllers, they said, such as a Microsoft Wireless Xbox controller.

Brett Jones, writing in Projection Mapping Central, said, "the content in RoomAlive is driven in real-time and dynamically adapts to the exact color and geometry of the user's living room."

The team's video also showcased sample experiences that would be possible with RoomAlive. The living room transformation possibilities included an indoor factory; a river running through the floor with dynamically created raindrops; virtual critters appearing around the living room; a virtually animated mole; and robot attacks. In summary, said the video presenter, "RoomAlive enables any living room to be transformed into an augmented interactive display."

Jones commented that "RoomAlive looks farther into the future of [projection](#) mapping, and asks what new experiences will we have in the next few years?"

Engadget associate editor Steve Dent said it was not difficult to see "huge potential in the research—not just in gaming, but also for [fields](#) like education or military training."



**More information:** RoomAlive: [projection-mapping.org/roomalive-uist/](http://projection-mapping.org/roomalive-uist/)

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