

Innovations in Augmented Reality

By Vuzix

Based in Rochester, NY, Vuzix specializes in creating wearable display solutions. Vuzix's Augmented Reality eyewear supports standard 3D formats and comes complete with head-tracking and a camera. This technology allows users to see digital data integrated with the real world. Vuzix realized early on that their hardware needed compelling content, so they developed a plug-in for Autodesk 3DS Max called maxReality. The software allows designers and animators to export their scenes in to the real world with just one-click.

"We wanted designers to be able to interact with their creations in the real world," says Paul Travers, CEO of Vuzix "People are going to experience digital media in a new way, we're giving story tellers the ability to bringing their characters to life inside someone's home. The Autodesk platform provides us access to creative minds who can achieve this vision."

The Challenge

Modelers and animators are visual analysts and can develop a scene more quickly if they are able to interact with it. Moving around a 3D scene using a mouse and keyboard is often unintuitive and frustrating. Iteratively moving cameras around to render different angles or fly-around animations are time intensive, and detract from the creative process. Decision maker's experiences are often limited to the pre-rendered selections provided to them.

The development of assets for digital productions is a collaborative effort. Meetings between conceptual artists, directors, modelers and animators occurs on-line and screen sharing alone often leaves much to be desired. It's time consuming to describe changes verbally and it's hard

to point out 3D aspects of a model using standard video chat.

The Solution

maxReality easily integrates in to work flows, allowing designers to quickly export their content and examine it in the real world. The software can even be used by camera operators on-set to help with framing a virtual character in a scene. Instead of a tennis-ball-on-a-stick, photographers can see a fully rendered model as they position their camera to capture the action.

Multiple markers can be used with maxReality to track different aspects of a scene, allowing digital set designers to quickly work together in the real world to test different layouts. The markers can also represent interactive elements, triggering sounds and animations when they are in proximity to each other.

In just one click, designers can export their 3DS Max creations into an interactive augmented reality experience powered by maxReality's special effects and motion control tools. For instance, a set designer can view the building that they just finished designing in the physical space that it will occupy. Using maxReality the designer can then manipulate the building and experience it lifesize from a first person viewpoint in real-time stereoscopic 3D.

"maxReality allows anyone to easily have interactive augmented reality experiences. We've given designers the ability to instantly experience their 3D projects and creations instead of waiting hours or even days for physical models to be built." stated Travers.





Collaborative meetings become more streamlined. No need to switch to a screensharing mode and open 3DS, during a video conference you can inject your model right in to the feed with the free maxReality viewer and any webcam. Allowing collaborative teams to interactively discuss a scene over the internet while a participant shows their model live in the real world.

Vuzix has partnered with Metaio GmbH to provide interactive experiences on mobile platforms, combining Vuzix' revolutionary hardware with Metaio's cross-platform markerless tracking software. This enables you to bring your killer content directly to your client.


The Results

Utilizing Autodesk 3DS Max's plugin framework, maxReality takes minutes to install and a few simple button clicks to render your first Augmented Reality scene. Modelers

are able to quickly export their work and manipulate their vantage point in real-time. They interact naturally with their project using their webcam or STAR1200 glasses to rotate a marker and move the model around on the desk.

On-line meetings are shorter as participants are able to render their model in the video feed in real-time. Arranging multiple objects in a scene to describe a layout or pointing to a particular aspect of a scene is as easy as it would be with a physical model, but the models are current to the last version saved on the computer.

Augmented Reality files can quickly be transferred to decision makers and viewed using the free maxReality viewer software. Allowing non-technical users to review the latest version of a file and maneuver the character model in the palm of their hand.

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