

Digital Worlds - Interactive Media and Game Design

A blogged course production experiment...

Friday Fun #15 Spore

Introducing Augmented Reality - Blending Real and Digital Worlds

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Tags: Total Immersion

The 1988 film "Who Framed Roger Rabbit" merged the worlds of human live action and classic Disney animation to present a world in which human actors and cartoon characters acted alongside each other (see trailer, or Amazon product listing).

The animations were painted on to the original "human action" film during a period of post production, but nevertheless, the result is still quite compelling.

Many film productions today also use post production techniques to add photo-realistic computer generated imagery (CGI) to a film, particularly in the area of special effects and 'digital virtual set design', but what if it were possible to actually interact with digital creations in real time? Step-in, augmented reality...

<http://www.youtube.com/watch?v=g8Eyccww6k&eurl=http://digitalworlds.wordpress.com/2008/06/30/augmented-reality-blending-real-and-digital-worlds/>

There are several augmented toolkits available on the web, many of which use the approach demonstrated in this BBC Radio 1 promotion:

<http://www.youtube.com/watch?v=NLahYcb7Ppg&eurl=http://digitalworlds.wordpress.com/2008/06/30/augmented-reality-blending-real-and-digital-worlds/>

A series of easily identified, high-contrast images are registered with the AR system (that is, the system is trained to recognise them) and then different movie clips are associated with those images. When the image is recognised, the video clip is overlaid on the image and starts to play. As well as videos, 3D computer graphics may also be superimposed on the detected image.

You can see more clearly how different patterns might be registered and associated with different 3D models in this page about the ARTag, augmented reality system: ARTag. (See also the ARToolkit - warning: if you don't know what a compiler is, this isn't for you...)

One of the easiest ways of experiencing augmented reality is to try out the Fix8 animation tool that lets you animate your own appearance by registering key facial features and then animating on top of those: Fix8

http://www.youtube.com/watch?v=zVwMJ9_D2bY&eurl=http://digitalworlds.wordpress.com/2008/06/30/augmented-reality-blending-real-and-digital-worlds/

(If you do have a go at creating a Fix8 movie, why post a link back to it here as a comment to this post?!:-)

How many ways can you think of using augmented reality? Write down two or three ideas as a comment to this post. To get you started, here's how you might use augmented reality to support car maintenance:

<http://www.youtube.com/watch?v=P9KPJA5yds&eurl=http://digitalworlds.wordpress.com/2008/06/30/augmented-reality-blending-real-and-digital-worlds/>

...or maybe Lego car maintenance!

<http://www.youtube.com/watch?v=IM9rH5XKWsM&eurl=http://digitalworlds.wordpress.com/2008/06/30/augmented-reality-blending-real-and-digital-worlds/>

(Lego have also started experimenting with augmented reality kiosks that register a tag on a Lego box and then display a 3D animation of the model that can be constructed from that Lego set sitting on top of the box.)

Finally, here are a few ideas for augmented reality games: Top 10 augmented reality demos that will revolutionize video games. (Note that this list may be a little dated by now - if you manage to find any more recent examples, please post a link back to them in a comment to this post.)

So how does AR actually work? To explain that, I'll need another post...