

Fall 8-22-2013

TourGuide: Augmented Reality Based on Structure Recognition

Michael Jipping
Hope College, jipping@hope.edu

Follow this and additional works at: http://digitalcommons.hope.edu/faculty_presentations

 Part of the [Graphics and Human Computer Interfaces Commons](#), and the [Other Computer Sciences Commons](#)

Recommended Citation

Repository citation: Jipping, Michael, "TourGuide: Augmented Reality Based on Structure Recognition" (2013). *Faculty Presentations*. Paper 14.
http://digitalcommons.hope.edu/faculty_presentations/14
Fall August 22, 2013.

This Poster Session is brought to you for free and open access by Digital Commons @ Hope College. It has been accepted for inclusion in Faculty Presentations by an authorized administrator of Digital Commons @ Hope College. For more information, please contact digitalcommons@hope.edu.

TourGuide: Augmented Reality Based on Structure Recognition



Mike Jipping, Computer Science Department



TourGuide is Augmented Reality on a Smartphone

TourGuide is software for Android phones and tablets that allows users to use **augmented reality** to see the world. TourGuide uses realtime video to search for images that match those in its database. When these images are found, TourGuide overlays the image with a number of options – from URLs/Web to video viewing – that are used to access more information about the image by touching the screen.

The software is designed so that configuring it is easy. In addition to the viewer, there is also a TourGuide Editor that allows configuration on a tablet or phone.

How is TourGuide useful?

TourGuide has some immediately obvious applications. It's name implies a “guide” based application: facilitating a tour of buildings and facilities with information layered onto the image.

Here are some pedagogical applications:

- Giving students assignments that generate historical information about a section of Holland, visible through the app.
- Producing a video history of Hope College, accessed on a walking tour of campus.
- Designing a treasure hunt, where the map is only accessible on certain buildings viewed through the application
- Having students produce energy data for buildings on campus, then watch that data over time, displaying graphs on each building's energy usage as viewed through the app.

This work was supported by the National Science Foundation and the Howard Hughes Medical Institute.



What is Augmented Reality?

Augmented Reality is the adding of data – images, text, HTML links – to physical scenes viewed in realtime. This is done by processing realtime video using a computer and redisplaying the result – through a television or computer display.

Sports commentary is a great example of augmented reality.



Improvements to TourGuide

TourGuide currently only works on *external buildings*. Next steps are to extend the AR to 3-dimensional objects (like statues or landmarks) and to make the app work inside buildings.

Try It Out For Yourself

