INTERACTIVE CAMPUS NAVIGATION

The example of 3D web in a university

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Many institutions had created digital cities using different 3D Web platforms (for example, Google Earth, Apple Earth, Microsoft Earth) for users to browse online (Chiu and Peng, 2005; Dokonal, 2008). Since 2008, Google, via the platform of Google Earth, has provided users with the 3D modeling software SketchUp to create buildings and then upload their works to Google 3D Warehouse. After official approval from Google, the uploaded user-created models would be published on Google Earth. After years of development, many cities on Google Earth are now displaying a large number of uploaded buildings. Therefore, Google Earth has been a useful tool for general public to understand the cities in the world. However, the interactive building browsing functions provided by web browsers on Google Earth only include simple Zoom In/Zoom Out, Pan and Rotation. There were no systematic or robust means for presenting spatial information of the region. For example, the smaller scale of objects like the bus stops, outdoor sculptures are not easy to find in the process of 3D navigation.

Hence, this research project aimed to establish an interactive virtual navigation platform based on Google Earth for college freshmen and visitors about campus buildings and the surrounding environment. Navigating functions provided by the platform were divided into two parts - automatic navigation and user-directed navigation.

Four major steps were implemented for the 3D web platform. Step 1: Collecting important information about campus buildings, landscapes and surrounding environments. Step 2: Create building models and sculptures with low-polygon counts and textures. The major modeling tool used was 3Ds Max. Step 3: Designing an interactive navigation interface and the paths of the automatic navigation. Google Earth API(2012) with AJAX, and
SketchUp were used as the tool to integrate online option menus into Google Earth. Step 4: Carrying out usability testing in order to understand possible user issues when utilizing the 3D platform.

![Figure 1: a. The visitors can press the buttons to navigate the buildings/objects in the website of 3D campus of Asia University, Taiwan (http://ando.asia.edu.tw/vau/). b. the sculptures c. bus stop d. Art Museum, e. building for library and administration and so on in the campus.](image)

We expect the research project of networked 3D navigation platform (Figure 1) can help college freshmen and visitors to understand the spatial information of campus buildings and environment more easily and intuitive. The contribution of the research could provide a reference case for navigating a 3D campus or region.

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**References**


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