

VITA : Visual Interaction Tool for Archaeology (Demo)

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Abstract

VITA (Visual Interaction Tool for Archaeology) is an experimental collaborative mixed reality system for offsite visualization of an archaeological dig. Our demonstration of VITA allows multiple users to visualize the dig site in a mixed reality environment in which tracked, see-through, head-worn displays are combined with a multi-user, multi-touch, projected table surface, a large screen display, and tracked hand-held displays. VITA augments existing archaeological analysis methods with new ways to organize, visualize, and combine the standard 2D information available from an excavation (drawings, pictures, and notes) with textured, laser range-scanned 3D models of objects and the site itself. Users can combine speech, touch, and 3D hand gestures to interact multimodally with the environment.

Keywords: Mixed Reality, Collaborative Environments, Multimodal Interaction.

1. VITA System Highlights

This demo presents VITA, a collaborative mixed reality system that allows users, ranging from interested novices to experienced archaeologists, to visualize and explore an archaeological excavation off-site. Multimedia excavation data was collected from an ongoing Stanford University archaeological excavation at Monte Polizzo in western Sicily. In VITA, standard archaeological recorded data, which is mostly 2D in nature (drawings, pictures, and notes), is combined with a variety of newly acquired data (3D panoramic images, 3D models of small finds and of the site itself at various stages of excavation, video, and ambient audio), all of which is available in one seamless collaborative environment, as shown in Figure 1.



Figure 1. Two users simultaneously collaborate in VITA. While one user is inspecting the 3D virtual model of the ceramic vessel above the table comparing it with the high resolution image on the screen, the second user is looking at the 3D miniature terrain model next to the table. (Video see-through capture).

Up to two users can navigate this rich multimedia environment using multimodal interaction, by combining speech, touch and 3D hand gestures. VITA was originally designed for archaeologists or archaeological students possessing at least basic excavation knowledge; however we believe that the simplicity and intuitiveness of our interactions make it possible to demo the system to a wide audience.

Additional Information

VITA is described in more detail in H. Benko, E. Ishak, and S. Feiner, “Collaborative Mixed Reality Visualization of an Archaeological Excavation” (To appear in Proc. ISMAR 2004) and can be previewed in a digital video (DivX encoded) available for download from: <http://www.cs.columbia.edu/graphics/projects/vita>.

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