

# Demo: Exhibition Approach Using an AR and VR Pillar

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## ABSTRACT

This demonstration presents a development of an Augmented Reality (AR) and Virtual Reality (VR) pillar, a novel approach for showing AR and VR content in a public setting. A pillar in a public exhibition venue was converted to a four-sided AR and VR showcase. A cultural heritage theme of Boatbuilders of Pangkor was been featured in an experiment of the AR and VR Pillar. Multimedia tablets and mobile AR head-mount-displays (HMDs) were freely provided for the public visitors to experience multisensory content demonstrated on the pillar. The content included AR-based videos, maps, images and text, and VR experiences that allowed visitors to view reconstructed 3D subjects and remote locations in a 360 virtual environment. A miniature version of the pillar will be used for the demonstration where users could experience features of the prototype system.

## CCS CONCEPTS

• **Human-centered computing** → **User studies; Mobile computing;**

## KEYWORDS

Augmented Reality, Virtual Reality, User Study

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Figure 1: People using the AR and VR Pillar

## 1 APPROACH

AR and VR technology has been extensively used in the past to create interactive museum and art gallery experiences. This paper describes a novel use case for AR and VR in creating an enhanced exhibition pillar. Four types of content were featured on the 4-sided pillar; (1) AR video, (2) AR static text and image, (3) AR with 3D objects, and (4) VR360 interactive panorama. Previous studies [Ciurea et al. 2014; Frasca et al. 2014] have demonstrated the use of AR and VR which helped to increase the visibility of exhibited content with key intention of having enhanced user experience which leads to increased visitor numbers of museums or galleries. We present an early prototype of an AR and VR Pillar system that works with mobile devices in an exhibition space (see figure 1). This configuration provides a range of different AR and VR experiences in short amount of time around a single pillar. The pillar was imprinted with a set of images that served as AR tracking markers and to trigger the VR content. A 2D Image-based AR tracking method was used to support the AR experience, using the server-based tracking library. The approach works with multiple users simultaneously, allowing each visitor to have their own user experience without interfering with others. In the future, we will also explore hybrid approaches that combine online and offline content delivery.

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