

## ABSTRACT

Augmented Reality (AR) applications have seldom been developed for viewing and experiencing architectural heritage. Architecture is typically experienced and learned through tours of actual sites. This thesis proposes a new application based on augmented reality technology for users to experience learning and to enjoy architectural heritage. This thesis develops and evaluates AR in order to offer new and enjoyable experience to the public in which the users are able to use and play with a 3D representation of a Malay house. This thesis aims to evaluate user acceptance in an AR application for the architectural virtual heritage experience. This thesis has three objectives; to develop and document a process of developing a specific application, to evaluate the application in the field and the significance of its realism, and finally to discuss the findings and future potential development of the application. The case study, Rumah Pak Ali, was selected because it was recently damaged during a fire on its original site. Besides evaluating the response and feedback of users on this new technology, this study attempts to evaluate architectural heritage realism in an augmented reality application. This study employs the Design Science Research Methodology which emphasizes the need for constructive research methods that allow the disciplined, rigorous, and transparent building of the AR application as outcomes and to distinguish the work from an ordinary practice of development and application. This thesis will provide a high-quality, simple approach to AR evaluation, with more 'realism' for guidance and hence authentic experience and knowledge, to the users in exploring the architectural heritage content. This thesis will also facilitate and expedite the construction process for simulation as well as the 3D AR development for the architectural heritage components in AR. It is anticipated that this study will contribute a conceptual model of an architectural heritage realism and provide substantial empirical evidence for the level of realism that the AR application may offer to the architectural heritage community and give a better experience to the user in learning the architectural heritage. Finally, this thesis will demonstrate that realism elements play a significant role in the 3D AR application for public users.

Keywords: Augmented Reality, 3D, AR, Realism, Non-realism, architectural heritage