The Development of 3D Virtual Reality: Case study of "Nawa Lantue" the figure of the Buddha, Chiangsaen

Abstract

The advancement of 3d visualisation technologies create an effective way to deliver a message to the audience by the use of computer generated imaginary. Abstract and concrete ideas can be transformed so that users can easily perceive and understand. Particularly in a museum setting, there are increasingly new ways to engage and educate visitors such as the use of mobile guides, interactive exhibits, games, and digital artefacts. However, creating immersive experiences for museums' visitors by using 3D-stereoscopic methods is very rare. Therefore, this study explore how to create 3D-stereoscopic visualisation content using computer supported tools. The content is based on the history of "Nawa Lantue" the figure of the lost Buddha, Chiang Saen. The reference data was collected from various sources including Chiang Saen Museum and local philosophers. The Buddha figure was created by 3D modelling software and then anaglyph stereo 3D content was created: two separate single images as different colours (blue/red) to use with colour filter glasses. Two parallel projection cameras (camera rigging) needed to be setup in the scene with a separation value of about 6.5 cm. Interaxial Separation and Zero Parallax were used to adjust far/near vision of 3D objects in the scene. The study found that 3D software can support the creation of 3D stereoscopic content through the anaglyph projection method. This method provided an economical presentation system which would be suitable for small or medium museums where there is a limited budget. However, in addition to the simple hardware requirement (video projector) to create the 3D-stereoscopic system and content, a special 3D content developer needs to be recruited.