AUGMENTED REALITY IMPLEMENTATION IN SOLAR SYSTEM MODELLING

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ABSTRACT

People have been taught about the different kinds of solar systems natural phenomena which occur around them since they were a child. Other than learning through direct observation, it could be taught by using school textbooks and encyclopedias. But, images in those books which explains the solar system is usually just a two-dimensional images. It could be difficult for a teacher to provide an explanation of the phenomena in the solar system correctly. An animation or video should give the student a clear picture of the natural phenomena than the two-dimensional images.

Augmented Reality is used to provide a better explanation of the phenomenon by presenting two dimensional or three dimensional model in real time. There are three phenomena which are being modelled on this final project, including the solar eclipse, lunar eclipse, and the arrangement of the planets in the solar system.

Based from the solar and lunar eclipse experiments, in order to make the shadow is able to seen, the camera must be put in appropriate distance. The shadow can be seen when the distance between the camera and the earth is approximately $x=119.51$, $y=45.141$, and $z=-16.691$. In the arrangement of the planet simulation, when detecting error by using six markers, up to four wrong ordered markers can be detected. When using more than six markers, the markers can not be detected.

Keyword : Augmented Reality, Solar system, Simulation,
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