A MULTI-MARKER-BASED AUGMENTED REALITY APPLICATION AS AN INTERACTIVE MEDIUM FOR IoT DEVICE ASSEMBLY

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ABSTRACT

The development of Internet of Things (IoT) technology is rapidly increasing and is beginning to be widely applied in various aspects of life. However, understanding of IoT devices and how they work remains limited, especially among students and the general public. Therefore, innovative and interactive learning media are needed to facilitate understanding of IoT-related materials. This research aims to develop an Augmented Reality (AR)-based application as an interactive educational medium for IoT device assembly. The research methods used include needs analysis, application design, implementation using Unity and Vuforia, and testing of functionality and educational aspects. This application is capable of displaying real-time IoT device assembly instructions through camera-scanned markers, complemented by interactive information about each device. Test results show that this AR application can enhance user understanding of IoT devices and their assembly with a higher level of effectiveness than conventional learning media. Thus, the application of Augmented Reality can be an alternative modern educational solution that is engaging, interactive, and easily accessible.

Keywords: Augmented Reality, Internet of Things, Educational Media