# MOBILE AUGMENTED REALITY (AR) APPLICATION – BENCHMARK IDENTIFIER AROUND SHAH ALAM

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Thesis submitted to the Universiti Teknologi MARA Malaysia in partial fulfilment for the award of the degree of the Bachelor of Surveying Science and Geomatics (Honours)

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#### DECLARATION

I declare that the work on this project/dissertation was carried out in accordance with the regulations of Universiti Teknologi MARA (UiTM). This project/dissertation is original and it is the results of my own work, unless otherwise indicated or acknowledged as referenced work.

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#### ABSTRACT

Combination of mobile technologies and Augmented Reality (AR) has recently enabled the ubiquity of AR technologies in our everyday life. This breakthrough has been applied in many fields, but yet has not been utilized by the mainstream in Malaysia. This dissertation project documents a research program in which a new mobile application is developed in order to aid in solving the problem arise, finding the location of benchmark. The main purpose of this project is to build an augmented reality mobile-based application which able to locate, identify and obtain required information of benchmarks (BM) around Shah Alam to users. Meanwhile, the objectives are to collect information about benchmarks existed within Universiti Teknologi MARA (UiTM) Shah Alam area from Department of Survey and Mapping Malaysia (JUPEM), and to develop a mobile application of location-based augmented reality using Android Studio software. Augmented Reality (AR) applications combine images, two-dimension or three-dimension virtual objects, with a three-dimensional environment in real time. It is a more flexible approach for locating object which determines the six degree of freedom and project the augmented image on the user's screen at any location hovered and project the three-dimensional view. To develop the proposed mobile app, Android Studio software and Wikitude SDK application will be used to perform the task. The mobile app consists of two main activities which are User Interface (UI) and Augmented Reality (AR). The UI activity let user to interact from one screen to another screen. Augmented reality activity let the user to experience finding the benchmarks virtually by hovering used device on selected location. At the end of this project, a location-based augmented reality mobile used is established and is ready to be used by user. The scope of this study limits only within Universiti Teknologi MARA (UiTM) Shah Alam's area. At the end of this thesis project, a location based mobile augmented reality application will be its outcome.

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