

3D MODELING FOR MOBILE AUGMENTED REALITY IN UNPREPARED ENVIRONMENT

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ABSTRACT:

The emergence of powerful mobile smartphones, with embedded components (camera, GPS, accelerometers, digital compass), triggered a lot of interest in the mobile augmented reality (AR) community and new AR applications relying on these devices are beginning to reach the general public. In order to achieve a rich augmentation in terms of immersion and interactions, these mobile AR applications generally require a 3D model of the real environment to provide accurate positioning or to manage occlusions. However, the availability of these 3D models based on real spatial data is limited, restraining the capacity of these applications to be used anywhere, anytime. To overcome such limits, we developed a framework dedicated to the fast and easy production of 3D models. The proposed solution has been designed for the specific context of mobile augmented reality applications in unprepared environment and tested on iPhone.

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