

Keypoints Extraction for Markerless Tracking in Augmented Reality Applications: A Case Study in Dar As-Saraya Museum

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Abstract : Archeological heritage is at the heart of each country's national glory. Moreover, it could develop into a source of national income. Heritage management requires socially-responsible marketing that achieves high visitor satisfaction while maintaining high site conservation. We have developed an Augmented Reality (AR) experience for heritage and cultural reservation at Dar-As-Saraya museum in Jordan. Our application of this notion relied on markerless-based tracking approach. This approach uses keypoints extraction technique where features of the environment are identified and defined into the system as keypoints. A set of these keypoints forms a tracker for an augmented object to be displayed and overlaid with a real scene at Dar As-Saraya museum. We tested and compared several techniques for markerless tracking and then applied the best technique to complete a mosaic artifact with AR content. The successful results from our application open the door for applications in open archeological sites where markerless tracking is mostly needed.

Keywords : augmented reality, cultural heritage, keypoints extraction, virtual recreation

Conference Title : ICIEI 2014 : International Conference on Information and Education Innovations

Conference Location : Istanbul, Türkiye

Conference Dates : October 27-28, 2014