An Analysis of the Effectiveness of Using Augmented Reality to Enhance the Performance of Footwear Shopping Applications

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Abstract. The Sri Lankan footwear industry has sustained for a very long time and has been successful in serving the local market. One of the biggest industries today struggling with e-business models is the footwear sector. The researcher has gone through the existing footwear-selling applications. During the procedure of analyzing the problem, the researcher conducted interviews with footwear sellers and buyers and distributed questionnaires to them. The key obstacle that people have encountered when making online purchases is finding the best footwear product that suits their requirements. This means that it can be difficult to imagine how shoes will appear on their feet and how they will feel when they are worn. The researcher found out that augmented reality can quickly resolve this problem. Augmented reality is a field of image processing that deals with the combination of the real-world and virtual environment. Researchers investigated through ARCore, ARKit, and DeepAR for 3D model visualization. In mobile app development, DeepAR has important features for 3D model rendering such as plane detection, point detection, light estimation, 3D objects tracking, background segmentation, and object placement. Therefore, the researcher has proposed DeepAR technology for footwear visualization. Users will be able to accurately visualize how the footwear will look on their feet in real-time. Finally, the researcher proposes a mobile application that would help customers who made direct online shoe purchases by letting them virtually see how the shoes would look once they were worn. To increase the profitability of the current footwear industry, the proposed system will give greater support.

Keywords: Deep Augmented Reality, Footwear Shopping, 3D Visualization