

Augmented Reality for Enhanced Performance in Footwear Shopping Applications: A Comparative Analysis

SHIDN de Silva^{1#}, MTA Wickramasinghe¹ and D Gunasekara¹

¹Faculty of Computing, General Sir John Kotelawala Defence University, Ratmalana, Sri Lanka

#36-it-0010@kdu.ac.lk

Abstract

The Sri Lankan footwear sector has exhibited remarkable longevity, effectively catering to the local market. However, in contemporary times, the footwear industry grapples with challenges related to e-business models. The study delves into this issue, scrutinizing prevailing footwear-selling applications. Through a comprehensive approach, the researcher engaged in interviews with both footwear vendors and buyers, while also distributing questionnaires to gather insights. A significant hurdle encountered by consumers in the realm of online purchases pertains to identifying footwear products that align with their specific needs. The challenge lies in envisioning how the shoes will fit and feel when worn. Addressing this concern, the research identified augmented reality as a potential solution. Augmented reality involves blending real-world elements with virtual environments, offering a promising avenue for resolving this dilemma. The investigation encompassed ARCore, ARKit, and deep augmented reality for their capacity to visualize 3D models. Deep Augmented Reality (DeepAR), in particular, emerges as pivotal in mobile app development due to its robust features like plane and point detection, light estimation, 3D object tracking, background segmentation, and object placement. Accordingly, the researcher advocates for leveraging DeepAR technology to enhance footwear visualization. By implementing this approach, users can accurately perceive how the chosen footwear will appear in real time on their feet. This application facilitates a virtual preview of how the shoes would look and fit when worn, thereby bridging the gap between online shopping and physical experience. Ultimately, the proposed system not only enhances customer satisfaction but also holds the potential to augment the profitability of the current footwear industry. By providing unprecedented support and bridging the visualization gap, this innovative solution can significantly contribute to reshaping the trajectory of the industry.

Keywords: *Deep Augmented Reality, Footwear shopping, Virtual Shoe-Try-On*