Product Visualization in AR using Unity

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Abstract:

In the evolving landscape of e-commerce, the inability to physically examine products prior to purchase remains a major barrier to consumer confidence and satisfaction. This research presents an augmented reality (AR)-based product visualization solution aimed at transforming the traditional online shopping experience. By integrating AR technologies, the proposed application enables users to realistically visualize products, such as furniture, food items, and home decor, in their actual environments, thus enhancing decision-making and reducing uncertainty. The system leverages Unity and the Vuforia engine for robust AR integration, allowing image-based targeting and accurate 3D object placement. The development follows a systematic methodology, including requirement analysis, design prototyping, implementation, rigorous testing, and deployment. The platform further enhances user experience by providing detailed product information, reviews, and customization options. This approach offers an immersive, interactive, and user-friendly shopping experience, empowering customers to make confident and informed purchase decisions in a digitally augmented realworld context.

Keywords:

Augmented Reality, Vuforia Engine, 3D Object, E-commerce.