IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 5, Issue 7, May 2025
Impact Factor: 7.67

Enhancing Virtual Try-On Experience with AR: A Virtual Dressing Room Approach

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Abstract: *The expanding demand for immersive and personalized online shopping experiences has driven advancements in virtual try-on technologies. This project presents the development of an AR-powered virtual dressing room integrated within an e-commerce platform, enabling users to try on clothing items in real time using their device's webcam. The system allows users to visualize how different garments fit and appear on them before making a purchase, aiming to reduce return rates and improve customer satisfaction. Built using HTML, CSS, and JavaScript with webcam integration through the WebRTC API, the platform provides interactive features such as product browsing, size selection, and virtual trial, all within a responsive and intuitive user interface. The solution leverages front-end technologies and local storage mechanisms to simulate essential e-commerce functionalities like cart and wish list management. By enhancing the virtual shopping environment, the proposed system not only bridges the gap between physical and digital retail experiences but also promotes sustainable fashion practices by reducing unnecessary product shipments and returns. The results of this project highlight the effectiveness of lightweight web-based implementations in delivering scalable, user-friendly, and engaging shopping solutions that align with modern consumer behavior and expectations..*

Keywords: WebRTC

DOI: 10.48175/IJARSCT-26897