



Furniture Preview

Mixed Reality

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PROBLEM

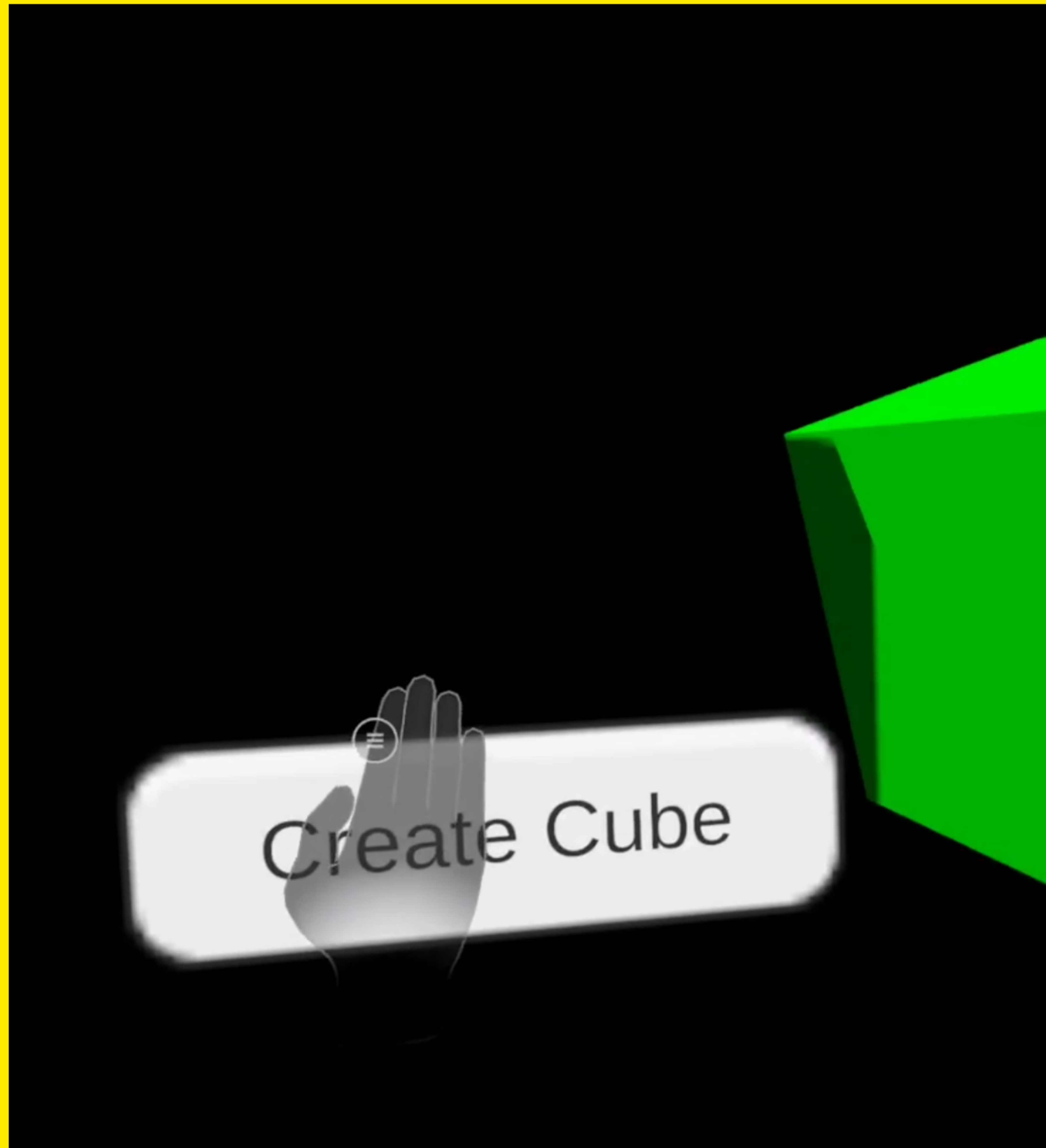
Consumers face a significant challenge when considering the purchase of expensive furniture for their homes. Determining the comfort, aesthetics, and fit within their living spaces is crucial, but visualizing how the furniture will look in their homes remains inconvenient. Traditional methods fail to adequately address this issue, resulting in uncertainty and potential regret after making a purchase. However, by leveraging Mixed Reality (MR) technology, consumers can digitally preview furniture in their homes before committing to a purchase.

METHOD

To address the challenge of previewing expensive furniture in the home before making a purchase, an innovative solution has been developed using Passthrough technology on the Meta Quest 2 and Unity engine. This augmented reality software seamlessly integrates virtual objects with the real-world environment, allowing users to place various virtual furniture items within their surroundings. By leveraging hand tracking capabilities, users can interact with and position virtual furniture in real-time, previewing how they would appear before committing to a purchase.

RESULTS

The solution utilizing Passthrough technology on the Meta Quest 2 and Unity engine for previewing furniture in the home has some limitations to consider. The visual clarity is often blurry, and color passthrough is not available on the Meta Quest 2, although this is addressed with the quest pro. Hand tracking latency and inaccuracy can cause user frustration, and users may require time to adapt to this unfamiliar technology. Furthermore, the current lack of object occlusion in the application hinders realism, but this could be addressed by allowing users to manually input their environment's dimensions.



YOUR APPROACH

- Unity Game Engine
- Meta Quest 2 Passthrough
- Hand Tracking
- Hand Pose Tracking

RELATED WORK

The Ikea Place app for iPhone and iPad utilizes Apple's augmented reality kit to enable users to select and place dimensionally accurate 3D furniture models within their homes. While using a phone or tablet for augmented reality furniture preview is accessible, it suffers from a limited field of view, making it difficult to assess furniture within the larger space. Passthrough and mixed reality technologies address this limitation, providing a more immersive furniture preview experience compared to using a phone or tablet alone.