

# Advanced Conferencing Platforms with Extended Reality: Innovations and Applications

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**Abstract**—The integration of Virtual Reality (VR) technology into video conferencing has revolutionized remote communication by providing unprecedented immersion and collaboration. This paper presents a comprehensive overview of the field, including its historical roots, current trends, and future directions. By analysing existing solutions' advantages and limitations, we aim to inspire further research and development, ultimately enhancing VR solutions for remote communication. With the COVID-19 pandemic highlighting the limitations of traditional online meetings, our project highlighting the limitations of traditional online meetings, our project focuses on developing a VR environment that fosters intuitive, real, and natural interactions, leading to greater productivity and clearer communication. By leveraging advancements in VR hardware, software, and connectivity, we envision a future where remote interactions become seamless, lifelike, and conducive to effective collaboration. This study investigates the development of virtual office and classroom settings within the realm of virtual reality (VR). It examines the obstacles encountered in remote interactions and suggests innovative strategies to overcome them. By performing a thorough problem analysis, we pinpoint key challenges and details the methods employed in the development of our VR solution. Further, the proposed VR approach is evaluated in comparison to current technologies, emphasizing the unique benefits and features of proposed technique. Henceforth, this research work offers insightful perspectives of the capabilities of VR in video conferencing, setting the stage for ground-breaking advancements in remote communication.

**Index Terms**—Virtual Reality, Unity 3D, Meta Quest 2, Photon Unity Network (PUN), Metaverse.

## I. INTRODUCTION

Virtual reality (VR) represents a transformational technology with the potential to revolutionize remote communication and education. The proposed work aims at developing a VR conferencing platform that seamlessly integrates physical and virtual interactions. The platform introduces collaboration, communication and engagement by offering dynamic virtual spaces for conferences, meetings, and remote learning. The platform also extends lifelike interactions, adaptable environments, and interactive features, thus redefining remote work and education. Leveraging the power of VR, the proposed work aspires to create meaningful connections and facilitate learning across different locations.

In order to develop our virtual reality solution for the present state of conferencing solutions, this study will conduct an extensive literature review. These precise facts serve as a driving force behind it:

- Enhanced Communication: VR conferencing encourages natural interaction and simulates in-person meetings, increasing productivity and collaboration in offices, classrooms, and distant work environments.
- Immersive Learning: VR in the classroom offers relevant and interesting experiences that improve student engagement and learning retention. VR training strengthens hard and soft skills for jobs like public speaking and customer service.
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- Sustainable Solution: VR meetings eliminate the need for travel, therefore reducing carbon footprint. VR conferencing is a cost-effective choice for remote collaboration and communication as all-in-one VR headsets become more widely available.

The main objectives of this work are as follows:

First, we will delve into people's sentiments toward the work-from-home culture, thoroughly surveying and analysing the current state of VR technology in video conferencing, highlighting the advantages and limitations of existing solutions. Section 3 will be arriving at the problem statement of the project through problem analysis, section 4 discusses the techniques used during the implementation. Section 5 compares the results of our VR solution with the results of existing technologies. We conclude this paper with section 6 highlighting our findings and final thoughts.

## II. RELATED WORK

### A. Work from Home

Working from home is a mode of employment where employees can perform their work from any location of their choice through the use of technology for communication and collaboration with co-workers. The trend has gained widespread acceptance in recent times due to advancements in technology and shifting work styles. Several companies have adopted remote work policies in response to the COVID-19 pandemic. Work-from-home offers numerous benefits such as flexibility, cost savings, reduced absenteeism, and improved access to talent. [15] was about an analysis conducted on a dataset of 100,000 twitter posts to evaluate public attitudes towards remote work. The Retweet package was used for data collection, the NRC Emotion Lexicon and Syuzhet package version 1.0.1 were selected to assess a range of emotions which included fear, joy, anticipation, anger, disgust, sadness, surprise, and trust. Results showed that over 27% expressed negative sentiments and 73% of respondents had a favourable view of working from home. The primary emotions associated with remote work were anticipation, trust and joy, with relatively few tweets reflecting fear, sadness, anger, or disgust.

### B. Metaverse

A virtual reality-based universe known as the metaverse allows users to interact and engage in a common digital space, fusing virtual worlds with reality. Zallio et al.[1] conducted research to evaluate the present challenges within the metaverse and the effect on their users. The study showed that restricted design practices, lack of diversity, and unequal access to technology can have a poor effect on its users, especially for those from racial/ethnic minorities, which was concluded by recommending guidelines to design the metaverse with a focus on inclusion, diversity, equity, accessibility, and safety, making sure that virtual environments are accessible and secure for all users.

### C. Compare VR Conferencing and Video Conferencing

VR meetings and video conferencing was compared using the Photon Cloud platform which is advantageous as it makes the implementation of multiplayer VR technologies less complex. The participants reported a stronger sense of presence, valence, control, arousal, and closeness in VR meetings in contrast to video conferencing. The differences in feedback between men and women was also discovered[2].

A second study involving usability evaluation of two web-conferencing systems, Zoom and Microsoft Teams, as well as a virtual reality social platform, AltspaceVR.

Participants were asked to perform specific tasks and provide feedback on the system's user experience and the level of presence they felt during the sessions, which highlighted the importance of considering the concept of presence in online classes and the part that web-conferencing systems and virtual reality social can play in creating a sense of being there for students[7]. Steinicke et al.

[3] did a comparison study on immersive VR with HMD. The parameters like spatial presence, perceived realism, social presence, cyber sickness, and usability were calculated.

#### D. VR In Different Conferencing Spheres

McVeigh et al.[6] probed the implementation of VR-based conferencing as an additional alternative to conventional in-person meetings. It reviewed various VR platforms, including Meta's Horizon Workrooms, and highlighted their ability to reduplicated the nuances of physical meetings while introducing unique features that are impossible to achieve in physical or standard video conferencing environments. The concept of "conversational parity" in meetings was addressed by developing two prototypes designed to embody implicit environmental dynamics, thereby creating a balanced conversation—a challenge in conventional offline settings. In another study, the potential of mixed reality (MR) for enhancing virtual-world teleconferencing was explored, with a focus on system design and implementation, integrating avatars, gesture recognition, and 3D audio. The evaluation showed that mixed-reality teleconferencing offers a significantly more immersive and interactive experience as compared to conventional video conferencing. Also, the study found that incorporating avatars and gestures enhanced communication and collaboration in the virtual environment, providing key insights into how MR can transform teleconferencing. By illustrating the potential of MR to elevate teleconferencing experiences, this research contributes to the broader field of virtual reality and telepresence. Wang et al.[10] proposed a novel architecture for metaverse classrooms that employs MR and VR technologies, linking two identical physical classrooms on separate campuses with a virtual classroom hosted on a cloud server through which several critical challenges were identified that must be addressed for successful implementation, which includes maintaining student engagement and learning efficiency, and also developing effective teaching tools within the Metaverse classroom, and overcoming issues such as usability, cyber sickness, and high operational costs, emphasizing the importance of factors like user interactivity, navigation, system and network performance for the success of Metaverse classrooms.

#### E. Unreal/Unity

The objective was to convert a 2-D workplace layout into a virtual reality-compatible format, following a structured approach, which involves several key phases, each represented by a specific task within the Unity 3D game engine, including the creation of 3D models, virtual workplace design, and the programming of interactive elements. Last phase involved rigorous testing and resolution of any identified issues to ensure optimal functionality. Firstly, with a thorough analysis and preparation stage, where relevant references were gathered, critical objects for 3D modelling are identified, and object complexity is minimized to reduce performance impact, the virtual environment was created after within Unity 3D on the selected platform, with all necessary software development kits (SDKs) integrated into the project. The last step involved importing the required 3D models into Unity 3D, ensuring they were in compatible formats, before assembling the complete virtual workplace. Creation of a virtual workplace in Unity 3D was possible by importing a library of 3D models and placing them in the correct position according to their real-world counterparts, using built-in tools and a uniform method of creation, post which completing the virtual workplace, scripts using a programming language supported by the game engine (such as C#) to add interactivity and movement to the scene, allowing the user to fashion the VR experience to the desired purpose [18].

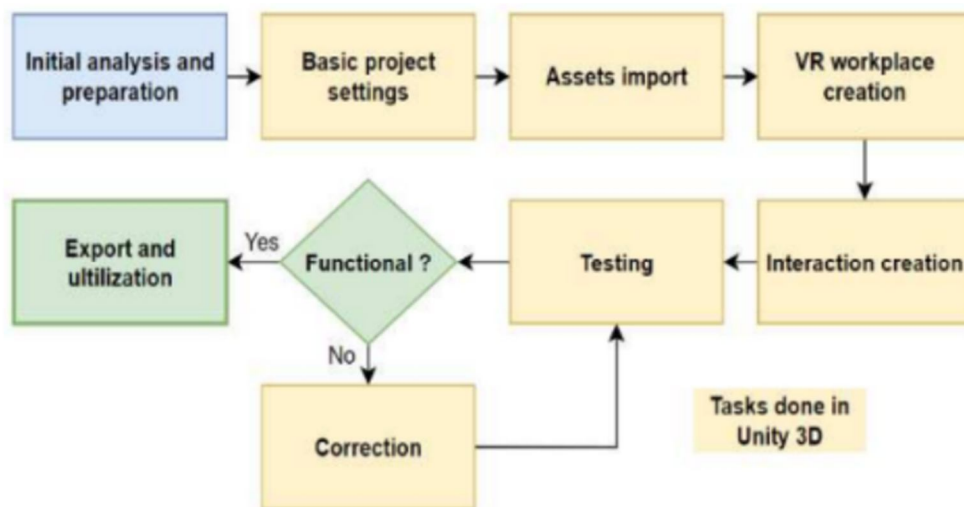


Figure 1. Virtual Workplace Creation Methodology [18]

### *F. Headset Comparison*

Angelov et al.[16] examined in general terms the classification and types of modern VR headsets and conducted a comparative analysis of perhaps the most popular tethered HMDs today. These are Oculus Rift S, HTC Vive Pro, HTC Vive Cosmos, Valve Index, and Samsung HMD Odyssey+. All of them were comparatively analyzed on the basis of Displays, Tracking, Controllers, and Ergonomics based on which it was found that the best VR headset in terms of technical parameters is HTC Vive Pro. Although it has a relatively large weight, in general, it has the most optimal and balanced set of qualities, compared to the others.

### *G. VR Future*

Salih et al.[20] present a comprehensive overview of the evolution of Virtual Reality (VR) technology, its current state, and future directions. It covers the various VR applications, technologies, and technical issues that are critical to understanding the field. The paper outlines previous VR trends, current VR technologies, and future directions. It also discusses the challenges and limitations of VR technology, and its various applications in areas such as entertainment, education, healthcare, and gaming.

The paper concludes by highlighting the future potential of VR technology and the role it will play in shaping our lives in the coming years. A prototype for capturing facial expressions from a laptop PC, as it can be challenging to capture expressions within head-mounted displays. They use the F Clone software to capture facial motion and map it to facial BlendShapes on an avatar in Unity. They also use the Affectiva SDK to detect emotions. In the prototype, different facial expressions of the player can trigger specific expressions on the avatar, such as a surprised expression triggering a predefined surprised reaction on the avatar, demonstrating the mapping of different emotions to a set of predefined avatar emotions[5]. The results of a certain study by Rizzo et al.[11] showed that the VR system had high potential as an efficient tool for measuring attention performance in children with ADHD using HMD for VR-delivered scenarios, as it was able to measure response time, RT variability, commission errors, omission errors, and hyperactive motor movement.

### *H. Avatar*

Panda et al.[17] developed AllTogether, a system that provides voice-only participants with the option to be represented by an avatar in a call with other video participants. Each participant joined three group video sessions using Together mode in Microsoft Teams. participants were either asked to use their webcam or only microphone or choose an avatar from the provided choices. Unity was used to make different kinds of avatars with different visuals, motions, and expressions. Using an avatar allowed users to be present while hiding their visual appearance. There are also technical benefits to using avatars in terms of bandwidth usage, enabling transmission that can utilize very low network bandwidth—addressing [14].

A system that uses HTC Vive trackers and an inverse kinematics solver to capture body movement, and an iPhone X with a depth camera to capture face data was developed. The captured data is applied to an avatar in iClone and transferred to Unreal Engine using a Live Link plugin, allowing for realistic body motions and facial expressions to be viewed on the avatar in the virtual environment providing effective communication in virtual reality (VR) applications to transmit users' thoughts and behaviour.

## III. PROBLEM ANALYSES

The advent of remote work and distance learning has necessitated effective video conferencing platforms for seamless communication and collaboration. While existing video conferencing tools have bridged the gap to some extent, they often lack the immersive and engaging qualities of face-to-face interactions. The limitations of current video conferencing tools include:

- **Lack of Immersion:** Traditional video conferencing tools are limited by their reliance on 2D screens, which results in a diminished sense of presence and immersion. Users usually experience feelings of detachment and disconnection from the remote environment, leading to reduced engagement and productivity.
- **Limited Non-Verbal Cues:** Non-verbal communication, such as facial expressions, body language, and gestures, is crucial for expressing emotions, intentions, and social dynamics. Video conferencing platforms in the present struggle to effectively transmit these cues, hindering the natural flow of communication and reducing the depth of interactions.
- **Inadequate Collaboration Features:** Conventional video conferencing tools are usually inadequate for collaboration work common in office and classroom settings, such as brainstorming sessions, whiteboard discussions, or group projects. This lack of intuitive collaborative tools and interactive features limits participants' ability to actively engage and contribute meaningfully.

- Absence of Spatial Awareness: Physical environments allow individuals with natural spatial awareness, aiding navigation, interaction, and context understanding, while in standard video conferencing, this sense of space is lost, making it challenging for participants to navigate virtual environments and engage effectively with others.
- Fatigue and Cognitive Load: Extended usage of conventional video conferencing tools can lead to participant fatigue and increased cognitive load. The limited visual and auditory stimuli, combined with artificial interactions add to shorter attention spans, reduced comprehension, and decline in learning outcomes.

#### *Advantages of Virtual Reality (VR) in Video Conferencing:*

- Immersive Environments: Participants can be transported to virtual office or classroom environments, giving an enhanced sense of presence, realism, and spatial awareness, which would promote greater engagement, improved focus, and stronger connections between participants.
- Natural Non-Verbal Communication: By the accurate capture and transmission of non-verbal cues, including facial expressions, body language, and gestures VR allows for more effective communication, leading to better understanding and stronger interpersonal connections.
- Natural 3D Verbal Communication: VR facilitates a more natural 3D audio experience, where the spatial distance and direction between participants are mirrored in their corresponding audio, making interactions in VR more intuitive and lifelike.
- Interactive Collaborative Tools: A range of intuitive and interactive collaborative features, such as virtual whiteboards, 3D object manipulation, and shared workspaces, which enable seamless collaboration, fostering creativity, problem-solving, and active participation.
- Enhanced Learning Experiences: VR provides students with immersive, memorable learning experiences by simulating real-world scenarios and interactions. This allows for hands-on learning, virtual field trips, and interactive demonstrations, facilitating better information retention and a deeper understanding of the material.

Finally, after the thorough analysis, the problem statement is as follows - “As the world moves to and becomes comfortable post the pandemic with virtual set-ups in workplaces, schools and other areas of life, online meetings have given us a way to interact remotely but has come with the disadvantages of interacting with the computer screen leading to general disconnect along with lapses in essential communication between remote individuals. Henceforth the need is to develop a virtual reality environment that can make interactions in the virtual set-ups more intuitive, real and natural hence ensuring greater productivity, clearer communication and real-like interactions.”

#### IV. SYSTEM ARCHITECTURE

Fig 2 shows the proposed application architecture developed by us during our research towards realizing our problem statement and consequently developing an application capable of overcoming prevalent issues. A certain user wears a VR headset which contains a Head mounted display (HMD) which enables the user to interact with the UI of the VR Headset. For our development, Meta Quest 2 Headset was used as we found it the most suitable to meet our requirements at an affordable price. Once the User is transported inside the virtual reality UI, they can then click on our app to open it. Initially the user is presented with a login environment where they can choose to either login anonymously or with a certain name, necessary interaction scripts to interact with the UI elements have been coded in as per need. Upon clicking connect via any of the two user preferred methods of login, a basic avatar of the user is instantiated and the user is then ported to a new home designed environment where-in they can choose their preferred avatar type from a set of presets and also choose their preferred available map to dive into and explore/utilize the maps as per their needs. The users are provided with a choice of 4 maps in this version of the application –

- School Map: A map made to realistically resemble a realistic school and relevant classrooms, whiteboards etc. The main use case for this map would be for potential teachers and students looking for a more intuitive method of online learning that wouldn't be possible via general video conferencing solutions available in the market
- Office Map: This map presents a realistic office conference room that is designed with a presentation screen, whiteboard and regular office furniture to suit your office teleconferencing needs.
- Outdoor Map: Outdoor map is an outdoor wilderness replicated map with a campfire for people to relax and interact in a casual and relaxing environment to serve as a break from their school/office sessions.

- **Fun School Map:** This map is made to represent a gymnasium or an indoor sports/fun environment in a school where students can relax and have a fun time together playing and interacting with fun games and team bonding activities.

Once the preferred map type is selected, the application connects to the photon server and a room (in photon terms) is created with the selected map type if it already does not exist. If the room already exists, a room-id with that room is returned. The player is then spawned into the respective room with the returned new/existing room id where the player can then interact with other players and/or the other interactable items in the room. Voice communication between players is made available to users using the photon voice servers. Once the users are spawned into the room, the application connects to the respective photon voice server for the specific rooms to enable 3-dimensional, spatial audio communication between different users. Relevant local interactions are made accessible using various C# scripts and multiplayer interactions also use the Photon network along with scripts to function effectively.

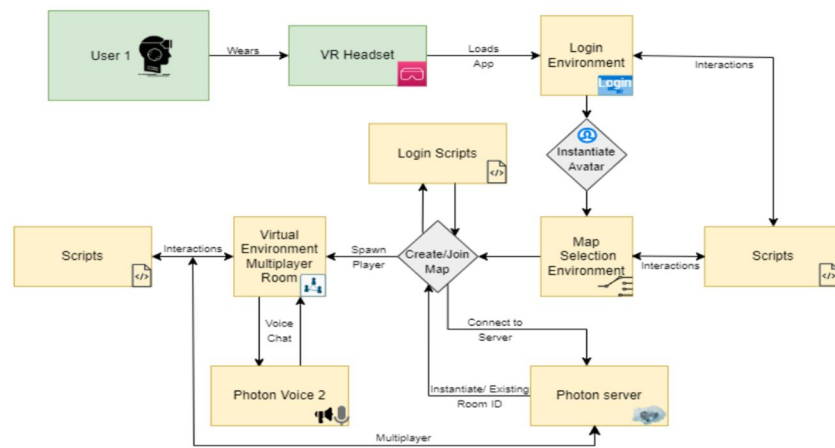


Figure 2. Application Architecture

#### A. Sub Systems Specification

- **VR Headset:** Popular virtual reality (VR) headset, the Oculus Quest 2, was created by Meta, formerly known as Oculus, a Facebook company. With its independent design, it provides a captivating VR experience without requiring a PC or console. The headset has an inside-out tracking system for precise movement detection, along with two 6-dof touch controllers, a high-resolution display, and strong processing power. The Quest 2 offers customers rich and engaging experiences with access to a variety of VR games and applications via the Oculus Store. Users can connect with peers in virtual worlds thanks to its multiplayer and social capabilities. In general, the Oculus Quest 2 has grown significantly in popularity thanks to its usability, performance, and wide variety of content.
- **Scripts:** Code created in the C# programming language that can be run separately or included into bigger software systems is referred to as a C# script. Microsoft created the contemporary general-purpose programming language known as C# (pronounced "C sharp"). Scripts created in C# are frequently used in the Unity game engine to build game logic, regulate game behaviour, and generate interactive components. Since C# is Unity's main scripting language, programmers can use it to create scripts that interact with the game's components, game objects, and physics.
- **Photon Server:** Photon Unity Network (PUN) is a networking solution for Unity, the popular game engine, that enables the creation of multiplayer games and applications. PUN is built on top of Photon, a networking engine and cloud platform for real-time multiplayer games and applications. PUN is widely used by game developers and is a popular choice for creating multiplayer games and applications using Unity. It offers a powerful and easy-to-use networking solution for Unity, enabling developers to focus on creating their games and applications, rather than on complex networking code.
- **Photon Voice:** Photon Voice 2 is an SDK that makes it easy to add high quality low latency voice chat to a Unity application. It is built on top of Photon Realtime and inherits all of its features, including matchmaking and interest groups. The client joins the room and creates an outgoing stream (local voice) which all other clients in the room can receive. Interest groups can be used to restrict streaming to group members inside the room.

- **Virtual Environments:** All the Virtual environments and interactions are created using the Unity game engine. Developers can create immersive VR applications with Unity for a range of devices and platforms, including PC, console, mobile, and specialized VR headsets. It is made simpler to create realistic and interactive virtual environments with Unity's tools and capabilities, such as VR Camera, Interaction and Input, Physics and Collisions, Audio Spatialization, Asset Store, XR tools and interaction packages along with the extended community and support.

## V. IMPLEMENTATION

The VR application developed was implemented in a modular fashion for each environment separately to ensure parallel work progress and ease in testing. Each environment was then integrated together and made common the various packages and scripts enabling the various interactions.

Some of the prominent packages taking care of some major features in our VR application include:

- **XR Interaction Toolkit:** The XR Interaction Toolkit is a framework developed by Unity Technologies that provides a set of tools and components for building cross-platform interactive experiences in XR (Extended Reality), which encompasses virtual reality (VR), augmented reality (AR), and mixed reality (MR). The toolkit aims to simplify the development process by offering a unified API and common interaction patterns for different XR platforms. The tool also offers a range of pre-built interaction systems, including teleportation, object grabbing and throwing, UI interaction, and locomotion. It allows developers to create XR applications that are compatible across multiple devices and platforms by abstracting the underlying platform-specific input systems. Extensive customization options is also available, enabling developers to tailor interactions to meet specific project needs. With the XR developers can craft immersive and interactive experiences that function seamlessly across various XR devices, engaging the users with virtual objects and environments in intuitive and compelling ways.
- **XR Plugin Management:** A robust feature that eases the integration and management of Extended Reality (XR) platforms and devices within Unity projects by providing a centralized system for configuring and managing XR plugins, enabling developers to seamlessly switch between different XR platforms as well as target multiple platforms concurrently. XR Plugin Management reduces the complexity associated with manually managing multiple XR packages and dependencies by offering a streamlined interface, allowing for efficient activation, deactivation, and configuration of XR plugins, that grants access to a broad range of XR plugins available through Unity's Package Manager, including both Unity-provided and third-party solutions. All these plugins offer essential tools, APIs, and functionalities needed for interacting with XR devices and platforms, such as tracking, input processing, and rendering. Moreover, the XR Plugin Management supports platform-specific configuration options, systematizing the development process for XR inputs and ensuring a consistent, high-quality user experience across diverse XR platforms. Overall, XR Plugin Management streamlines the integration and management of XR platforms and devices, thus enhancing the efficiency and workflow of XR development in Unity.
- **PUN2:** PUN2 (Photon Unity Networking 2) is a Unity package by Exit Games that simplifies multiplayer game development. It offers a high-level API, cross-platform support, and features like room management, matchmaking, and real-time messaging. PUN2 integrates with Unity's editor, provides scalability through Photon Cloud, and has extensive documentation and community support. It's a popular choice for creating multiplayer experiences in Unity games.  
Scripts for resolving object interactions, connecting people to multiplayer rooms using PUN2, enabling multiplayer interactions and various other features like login, avatar choosing and so on were all hard coded as C# scripts. These packages aided in easing the base setup for the various features to be implemented in the application.

### A. Snapshots of Developed Application



Figure 3. Login Environment



Figure 4. Home Environment



Figure 5. Office Environment-1



Figure 6. Office Environment-2



Figure 7. School Environment

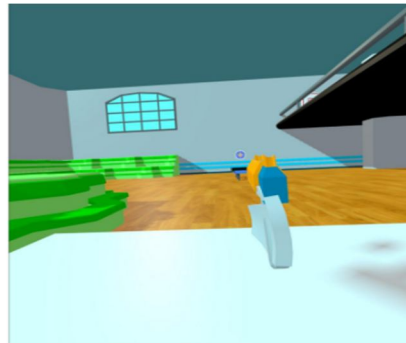


Figure 8. Fun School/Gymnasium

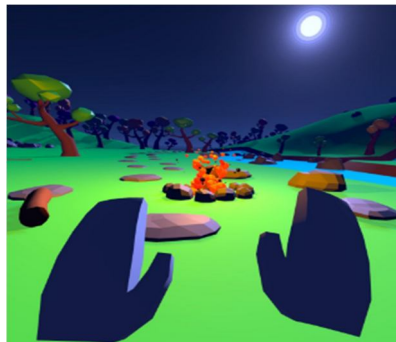


Figure 9. Outdoor Environment

```
public override void OnJoinedRoom()
{
    Debug.Log("The Local player: " + PhotonNetwork.NickName + " joined to " + PhotonNetwork.CurrentRoom.Name + "
    if (PhotonNetwork.CurrentRoom.CustomProperties.ContainsKey(MultiplayerVRConstants.MAP_TYPE_KEY))
    {
        object mapType;
        if (PhotonNetwork.CurrentRoom.CustomProperties.TryGetValue(MultiplayerVRConstants.MAP_TYPE_KEY, out mapType)
        {
            Debug.Log("Joined room with the map: " + (string)mapType);
            if ((string)mapType == MultiplayerVRConstants.MAP_TYPE_VALUE_OFFICE)
            {
                //Load the office scene
                PhotonNetwork.LoadLevel("OfficeScene");
            }
            else if ((string)mapType == MultiplayerVRConstants.MAP_TYPE_VALUE_SCHOOL)
            {
                //Load the School scene
                PhotonNetwork.LoadLevel("all_");
            }
            else if ((string)mapType == MultiplayerVRConstants.MAP_TYPE_VALUE_OUTDOOR)
            {
                //Load the School scene
                PhotonNetwork.LoadLevel("World_Outdoor");
            }
            else if ((string)mapType == MultiplayerVRConstants.MAP_TYPE_VALUE_OUTSCHOOL)
            {
                //Load the School scene
                PhotonNetwork.LoadLevel("World_Outdoor");
            }
        }
    }
}
```

Figure 10. Script for Joining Rooms

The Fig 10 provided Unity script in using Photon Networking handles a player joining a room by checking the room's custom properties to determine the map type. It then loads the appropriate scene based on the mapType value, ensuring the correct environment is set up for the player. For instance, it loads "OfficeScene" for an office map type and "all\_" for a school map type.

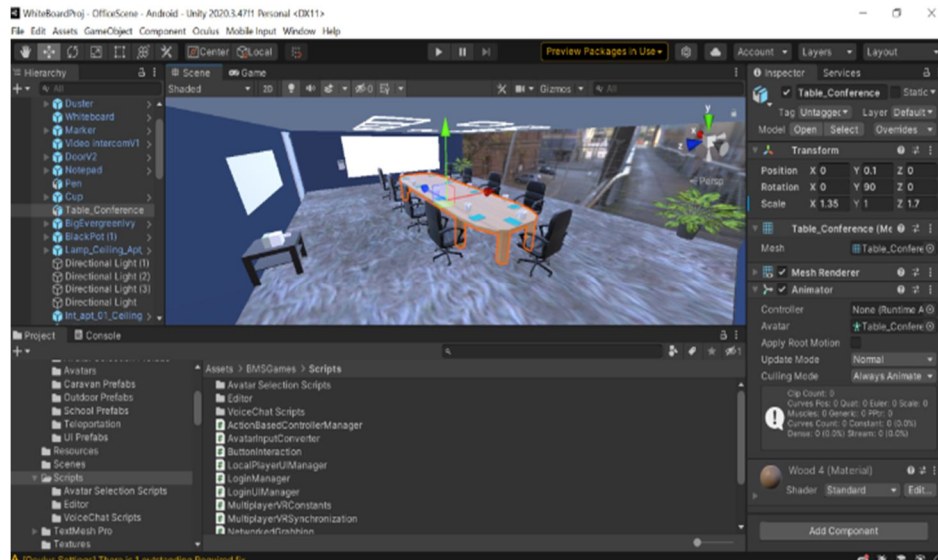


Fig 11: Unity 3D Project Workspace

Fig 11 shows theUnity editor screenshot depicts the "OfficeScene" with a conference table and surrounding objects. The hierarchy lists game objects, while the inspector shows the "Table\_Conference" properties and components. The bottom part displays project scripts and assets, supporting scene and object management.

## VI. CONCLUSIONS

We have attempted to provide a detailed design and implementation of a Virtual Reality (VR) meeting application, whose aims to revolutionize remote communication and collaboration. Our application provides a highly engaging and realistic meeting experience that overcomes the limitations of traditional video conferencing tools by leveraging the immersive capabilities of VR technology. Our implementation involved several critical components, including the development of a robust VR environment, real-time avatar rendering, spatial audio integration, and intuitive user interfaces. These elements have been meticulously integrated to create a seamless and immersive meeting space, enabling participants to interact and communicate in a more natural and intuitive manner. Our VR meeting application holds great potential for transforming remote meetings. By delivering a high level of immersion, it facilitates effective collaboration among global teams, regardless of their geographical locations. The integration of VR technology with video conferencing functionalities results in a more engaging, realistic, and inclusive meeting experience. As VR technology continues to advance, the capabilities of our application are expected to evolve, further enhancing remote collaboration. This development promises to revolutionize how we work and connect in the digital age, offering new possibilities for remote communication and teamwork.

## ACKNOWLEDGMENT

This survey is the outcome of our research carried out towards our final year project. Our guide Dr. Pallavi GB, Assistant Professor, BMS College of Engineering has directed our efforts in this project to conduct our research and shepherded our attempts towards identifying a practical, current problem in the market and envisage and develop an application to bridge the gap between the identified problems and the proposed solution. We wish to extend our acknowledgement to the Department of Computer Science of B.M.S. College of Engineering in aiding our project research and the various mentors and teachers for supporting and encouraging us. We also would like to thank Dharmendra Kumar, Vice President and Sathya Kumar Rao, Assistant Vice President of Reliance Jio, Bengaluru for their generous contribution of providing us with the hands-on experience of working with the Pico Neo VR headset.

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