

THE METAVERSE PARADOX: VIRTUALITY AND REALITY COLLIDE

Elira ABDURAMANI^{1*}, Shkurte LUMA-OSMANI¹, Arif ULLAH²

¹Department of Computer Science, Faculty of Natural Sciences and Mathematics, University of Tetova

²Department of Computing, Riphah International University, Faisalabad, Pakistan

* Corresponding author e-mail: e.abduramani320043@unite.edu.mk

Abstract

Revolutionizing the future has always been one of the most important purposes of humankind and we can finally say that with the newest sensation called the Metaverse, we can achieve that goal. By exceeding every expectation regarding virtual spaces we can also refer to as the ultimate version of the Internet. But at what cost?

The idea of the Metaverse has recently gained enormous popularity and has been dubbed "the successor to the mobile Internet". Even though there are currently minimal versions of the Metaverse, the strict sensing, communication, and processing requirements prevent us from achieving the goal of a smooth and interoperable Metaverse. Also, the development of the Metaverse coincides with consumers' growing privacy concerns.

The paper starts by giving a quick definition of the Metaverse. It talks about the Metaverse's architecture, concentrating on the definition of the Metaverse, the origins of the Metaverse, and most importantly ethical and moral obligations within the Metaverse.

Business, economics, and social advancement all stand to benefit greatly from the metaverse. Nonetheless, there are still several important factors to consider, and there has been hardly any analysis of how they will affect things. Several contributions are made in this paper. Starting with an analysis of the metaverse's foundational principles, then it raises attention to the novel privacy and security concerns raised by this new paradigm, before broadening the contribution's emphasis and emphasizing some of the far-reaching yet logical consequences and applications of the metaverse in the real world.

Keywords: Metaverse, Ethics, Virtual Space, Internet.

1. Introduction

If we go back in time, we realize that the internet in its first phases mostly meant text written on our computers. Then it evolved and we all got phones with cameras and the Internet became more and more visual. Now, our connections have become faster in many different aspects and video has become one of the main ways that we experience content to put up on the internet for us.

The human race is known for its eagerness to achieve the unachievable and make the impossible possible so yes, we didn't stop at photos, videos, or texts. We evolved constantly and today we have in front of us a more immersive platform or medium that can be perceived as an embodied internet. In this platform, you're in the experience and not just looking at it and it is known as The Metaverse. However, the Metaverse is still a futuristic concept because it is not finalized yet and it has multiple definitions as to what it is and what it means.

The Metaverse as a concept can be perceived differently by each one of us based on how we define and understand the internet.

There are a lot of different definitions on the internet that define Metaverse as a massive, open, and persistent virtual space that is shared by all users. It is a virtual space where the actions of users inside also affect their physical lives which allows us to call it the ultimate and the futuristic version of the internet.

In many articles, it is mentioned how associated the Metaverse is with virtual reality, it is a platform that serves as an instrument used to help people explore new experiences with the internet.

The term "Metaverse" was first used in the 1992 novel *Snow Crash*, which provided the most accurate description of what the Metaverse might resemble.

The metaverse has also been depicted in various books and films in many ways over the years. This concept is described as a paradox by many, in terms that it is one of the ideas that seemed impossible and unrealistic for people to construct in such a short period because 30 years ago this wouldn't have been much more than just a fictive dream.

It represents a collapse between the real and the virtual, it tests our conscience, the Metaverse is simply put another dimension, another world where we are represented by avatars. The metaverse also represents the biggest debate in terms of ethical and moral dilemmas, experts say, despite the fact of being a technology enthusiast's and the general majority's dream come true.

The main question is: Why should we care about what occurs in virtual spaces if they are only "virtual" and hence not real, much alone care about what the ethics of virtual worlds are or should be?

Ethics is a branch of study that dates to the invention of any technology and represents ideas on how people should treat one another and use their power responsibly and judiciously. There are numerous basic principles for ethics in private, public, and professional life articulated by ancient Greek philosophers that have been reinterpreted over the years and are used by our society to this day [4].

They are also referred to as world practical ethics and they are the principles that ought to be practiced in the Metaverse. They include the following: Everyone wishes to avoid harms like pain, death, and disability, everyone should be treated justly, and individuals are required to fulfill their role-related responsibilities without causing harm to anyone [4]. The same ethical rules or obligations that are applied in the real world should be also applied in the 'metaverse' or virtual spaces meaning the code of a virtual world should not allow virtual "crimes" such as theft or killing that infringe an avatar's rights, provided those virtual crimes are in keeping with the rules of the game played in that virtual world by the VW's code and EULA (end-user license agreement). The EULA or a code should never allow virtual crimes that could potentially degrade an avatar's person, such as virtual rape, even if this is intended as a part of a game in the virtual world [1].

2. A glimpse into the future's past

2.1 Early notions of the Metaverse: Everything in this world had to begin somewhere and at a certain point in time. The human imagination has always amazed me with the large capacity for creativity it possesses. In this case, a large number of people have contributed with their imagination and ideas to create that which us in the future would call 'The Metaverse'.

It is widely known that the term 'Metaverse' originates from the popular novel *Snow Crash* by author Neal Stephenson. But the truth is that the concept itself existed many years before the novel was published.

However *Snow Crash* had its influence by describing the Metaverse as a persistent virtual world that reached, interacted with, and affected nearly every part of human existence[2]. In the novel, there were 15 million human-controlled avatars whereas, in reality, there were less than 15 million worldwide users of the internet

in the year that the book was published. For the readers, Snow Crash was inspirational because it didn't matter if you were a farmer or a pizza deliverer, inside 'Metaverse' your whole life could change for the better. But just like everything that has to do with technology, even this novel made it clear that the Metaverse had worsened the real life that people were living in the real world, meaning their ethical and moral laws were broken, their daily routines destroyed and the society as a whole was led to destruction due to people escaping reality and becoming part of another world. As I formerly mentioned Stephenson was far from the first person to introduce the world to this concept.

'Pygmalion's Spectacles' "Figure 1" is a short story written by Stanley G. Weinbaum about "magical" goggles that made it possible for humans to experience a movie that gives them sight and sound.



Figure 1. Metaverse' envisioned in Pygmalion's Spectacles

He described the feeling of being in a virtual space as follows: you are in the story; you speak to the shadows and the shadows reply but instead of being on a screen the story is all about you and you are in it [2].

In "The Veldt" a short story written by Ray Bradbury in the year 1950 nearly 15 after 'Pygmalion's Spectacles', a nuclear family is envisioned with the parents replaced by a virtual reality playroom that the kids would never want to leave.

In 1953 Philip L. Dick's "The Trouble with Bubbles" took place in an era where humanity had explored deep into the galaxy but didn't find any life out there. People start to purchase "World craft," a product that allows them to construct and "Own [Their]Own World," which is then developed to the point of producing sentient life fully developed [2].

The term 'Cyberspace' was first coined by William Gibson in his novel Neuromancer in 1984. According to Gibson, it is "a consensual hallucination experienced daily by billions of legitimate operators, in every nation. A graphic representation of data abstracted from the banks of every computer in the human system." extraordinary complexity in the mind's nonspace, data constellations, and lines of light were visible, similar to the fading of city lights.

Notably, 15 years later, Lana and Lilly Wachowski would use the phrase "The Matrix" for their film of the same name, reusing Gibson's description of the visual abstraction of cyberspace.

2.2 Assembling the early Metaverses: The numerous efforts to create virtual worlds over the past few decades were more instructive than Stephenson's books and those that inspired them. The history demonstrates not just a multi-decade progress towards the Metaverse, but it also sheds further light on its characteristics. These

hypothetical Metaverses have been more about cooperation, creativity, and self-expression than they have been about exploitation or monetary gain.

Some researchers place the beginning of "proto-metaverses" in the 1950s, at the time mainframe computers first became widely used. At that time, people could finally communicate with one another entirely digitally across a network of various devices. The majority began with text-based virtual worlds known as Multi-User Dungeons, in the 1970s. In essence, MUDs were software-based versions of the Dungeons & Dragons role-playing game.

The game allowed players to communicate with one another, explore a fictional world filled with monsters and non-playable characters, gain knowledge and power-ups, and eventually find a magical chalice, vanquish an evil wizard, or save a princess by using text-based commands that resembled human languages [1].

Multi-user Shared Hallucinations (MUSHs) were developed in response to the MUD's rising popularity. MUSHs allowed participants to cooperatively design the environment and its goal, in contrast to MUDs, which required players to perform specified roles within the setting of a specific and typically fantasy story. Players can opt to situate their MUSH in a courtroom and play characters such as the defendant, attorney, plaintiff, judge, and jury members.

When the video game Habitat was released in 1986, technology took a significant step forward [3]. About Gibson's book *Neuromancer*, it was defined as "a multi-participant online virtual environment" and "a cyberspace." The world of Habitat was graphical, unlike MUDs and MUSHs, allowing users to view virtual surroundings and characters, although in pixelated 2D. Additionally, it gave players much more power over the virtual world. Habitat's players known as "citizens" were in charge of setting the rules, laws, and expectations for their virtual community [2].

There were no significant "proto-Metaverse" games in the 1990s, but technology kept evolving. The first isometric 3D virtual worlds, which appeared to be three-dimensional but only enabled users to move along two axes, were played by millions of people during that decade. Complete 3D virtual worlds soon after started to appear. A few games, such as *Active Worlds* and *Web World*, allowed players to work together in real-time to create a visible virtual space as opposed to using asynchronous commands and votes.

Active Worlds also had the explicit goal of creating Stephenson's Metaverse by encouraging users to contribute to its growth and population rather than just enjoy its virtual realms. *OnLive! Traveler* introduced spatial voice chat in 1998, allowing users to hear where other players were located about other participants and see how an avatar's mouth moved in reaction to the player's speech [2].

Keyhole would not achieve widespread acclaim until the middle of the 2000s after Google bought the company, it was the first time that anyone on Earth could view a virtual representation of the entire planet. The map was updated to partial 3D and connected to Google's considerably bigger library of mapping products and data over the next 15 years, allowing users to overlay data such as real-time traffic. After all these new proto-Metaverses were created they had left a huge impact and they had changed the way that people envisioned the future. Many people, started to think about the possibility of a parallel existence that would take place in virtual space with the introduction of *Second Life* in 2003.

After *Second Life* attracted over a million regular users, many real-world companies quickly established businesses there and created their presence. It enabled a thriving economy by enabling ever-improving infrastructure, technical capabilities, and tools that would draw in more developers and creators, who in turn would create things for other users to do, locations for them to visit, and things for them to buy, attracting more users and, consequently, more spending, which would attract more investment from developers and creators.

To achieve this, Second Life also provided users with the option to import virtual items and textures created on different platforms [2].

Despite Second Life's popularity, it was the introduction of the virtual world platforms Minecraft and Roblox that made its concepts more widely known in the 2010s. The long history of social virtual worlds from MUDs to Second Life to Minecraft to Fortnite helps to explain why the concepts behind the Metaverse have recently moved from the realm of science fiction and patents to the cutting edge of consumer and enterprise technology. Meta's Metaverse is thought to be the ultimate version of Metaverse so far because it has achieved many goals that haven't been thought of before. For example, this version of the metaverse is said to be more focused on education and also ensuring that people feel more connected to each other by doing many different activities together in a shared virtual space.

3. Avatars in the metaverse: a study of virtual identity

3.1 What is an avatar: The Hindu term avatara, meaning "descent of divinity" or "incarnation," is the source of the word avatar.

Earth as we know it is our natural and physical world with its physical laws. And those laws together with our physical senses enable us to feel, hear, and see every event that happens on Earth. Hence, when we live and breathe our minds experience those events through our physical body.

To make the understanding of the avatars simpler I can say that because we feel and enjoy the world through our physical body we can refer to our body as an Earth Avatar. An avatar is thought to be the physical representation of ourselves in a certain environment, which mimics our movements, emotions, etc.

When we become part of another dimension, in this case, the Metaverse we have to possess a body that exists there. Just like I mentioned earlier that we need a body to feel a certain feeling in an environment we also need a virtual body to be part of a virtual world. That body in the Tech world is referred to as Avatar. In the context of video games, the terms "Avatar" and "Character" relate to the concrete and abstract representations of the player. A user's representation in a Virtual World is their avatar. This might refer to a visual 2D or 3D presentation that allows the user to interact with the environment (such as in an online game), an icon (such as in a chat room), or a written description (such as in a Multi-User Dungeon MUD).

3.2 How avatars look: The physical procedure that uses Virtual Reality (VR) hardware and software to replace a person's physical body with a virtual one is known as "avatar embodiment". A Virtual Reality system tracks a user's movement and utilizes it to animate a virtual version of themselves. A Head-Mounted Display (HMD) is used to display this avatar from either the first or third-person perspective, giving the user synchronized visuomotor feedback. The user can frequently view the reflection of their avatar's moving body in a virtual mirror that has been set up in the virtual world [18].

For users, having the ability to design distinctive avatars is crucial. There are three key explanations for this based on numerous studies. Identity expression and identification, Virtual World Content Creation, and Reputation and Trust. Many people in the online community like being creative and adding elements of the actual world to the virtual one. Participants in an experiment made especially for Virtual Worlds made t-shirts and costumes. These virtual objects occasionally had components from the actual world; one of the participants had a T-shirt with a certain design that she wore in the real world, which many of her friends were familiar with and could recognize her in every environment even in a digital one. Users frequently desire to express their real or imagined selves in online spaces, much like they do in the real world. It can be challenging to

relate to a character who doesn't feel like one's own. Whereas other participants stated that they would feel more comfortable if their avatar didn't look like them at all. They stated that they wanted to create imaginary avatars that their friends and family wouldn't even recognize. Many users feel like they tend to be more successful inside the Metaverse if their avatar is unique to others' eyes. When they create interesting avatars, the content that they create in the virtual world is much more successful compared to users with normal avatars. Avatars for the metaverse can be created using a variety of tools and platforms. Some virtual worlds and metaverse platforms, such as Second Life and Decentraland, allow users to create and customize their avatars using in-world tools and features. Other platforms, such as VRChat and Roblox, offer avatar creation options that may include pre-made templates or more advanced customization options.

Additionally, there are third-party applications and software, such as Character Animator, iClone, and Ready Player Me "Figure 2" that can be used to create and animate avatars. Some of these tools are designed specifically for use in virtual worlds, while others are more general-purpose and can be used to create avatars for a variety of contexts, including gaming and video production.



Figure 2. Avatar created for Metaverse in Ready Player Me

3.3 Security threats for avatars: "In the metaverse, fraud, and phishing attacks targeting your identity could come from a familiar face – literally – like an avatar who impersonates your co-worker, instead of a misleading domain name or email address." [19].

To deceive others, a malicious player may disguise his avatar as that of the target player, obtain device authentication from a genuine player to control the associated avatar, and even repeat old data gathered from interactions with the target player. Therefore, it's supposed that the malevolent player is capable of mounting the following assaults:

Disguise: In the virtual metaverse, the attacker poses as a malicious avatar who resembles the target avatar to trick the interactor.

Impersonation: To manipulate the associated avatar in the real world, the attacker poses as a malicious manipulator and uses a device that has been authenticated by a real player.

Replay: The attacker gathers the outdated identification parameters linked to an honest avatar in both the metaverse and the real world and gives them to the interactor who poses as the target avatar.

to avoid and protect the avatars of the users there are specific goals that the framework should achieve as follows:

Traceability: Also known as virtual-physical traceability, traceability refers to the ability to link an avatar in the virtual metaverse with the matching manipulator in the real world. A malicious avatar must be linked to its manipulator using the identity parameters associated with the avatar that is stored as part of the authentication process, whereas an honest player must not be deceived by false identity parameters associated with his avatar.

Consistency: The avatar's virtual and physical identities must match to ensure virtual-physical traceability. Therefore, to prevent disguise, impersonation, and replaying, we need to verify the authenticity of the avatar's virtual identity, physical identity and submitted identification characteristics.

Decentralized: Avatar authentication is possible without the assistance of a reliable third party.

Immersive: Players are guaranteed an immersive experience during the authentication process because no special actions are required.

Privacy: During authentication, the player's real identity is kept confidential.

4. The ethical dimension of the Metaverse

Despite all the significant investments, the *Metaverse* remains an abstract concept to the masses. Nobody knows when its final form will be finalized; it could take years or perhaps a decade, but the significant investments being made in the development of this field are optimistic and hold out the possibility of our new, more advanced future. It is yet unclear exactly how the metaverse will affect society and the economy in the long run. However, Metaverse is expected to present a variety of new job opportunities, and possibilities but on the other hand, it also comes with never-before-experienced risks, ethical concerns, and issues.

As the metaverse, a virtual world where users can interact with each other and digital objects in a shared space continues to gain popularity, it is important to consider the ethical dimension of this technology. The metaverse has the potential to revolutionize how we interact with each other and access information, but it also raises several ethical concerns. These include issues related to privacy, ownership, and autonomy, as well as the potential for harm and manipulation.

Some of the most pressing ethical concerns related to the metaverse include:

Privacy: The metaverse is a virtual world where users can interact with each other and digital objects in a shared space, which raises concerns about the collection and use of personal data.

Ownership: The metaverse is a digital world where users can create and own virtual assets, which raises questions about property rights and intellectual property.

Autonomy: As the metaverse becomes more immersive and realistic, it may have an impact on users' autonomy and decision-making abilities.

Harm and manipulation: The metaverse can be a powerful tool for manipulation and can also be used to cause harm to individuals or groups.

In the modern Internet, it is stated that if you don't pay for an item or service, then you are the asset that is being sold. The clearest example of this is social media and social networking sites. These platforms provide free services that involve millions, if not billions, of users, all of whose preferences are so well-known to the platforms themselves that they can provide consumers with incredibly precise, microtargeted adverts. Even with modern technology, the digital traces we leave behind already reveal a great deal about our personalities, preferences, and orientations. This has been true since the very first research, which was conducted years ago, even though today's tracking powers have grown enormously.

What might occur in the metaverse considering these presumptions?

We can only envision the data collection capabilities and related applications made possible by the metaverse concerning the privacy of its users.

4.1 User profiling in Metaverse: Because in today's modern internet, if you aren't paying for some service, you become the product, we can't help but envision how many steps further will the Metaverse go compared to today's advanced technology. It has already started developing and it's fascinating, it's innovative, and unpredictable. In the metaverse, everything and anyone will be the product if social network members are the current Internet's product. It is known that Internet 2.0 made it possible for advertisers to track how users move their mouse, where they focus on a screen, how long they spend looking at a specific image, and which users or items they like.

When you think of that you can only imagine how much more information will Metaverse be able to collect from its users. Current data collection methods and associated analyses will be viewed as, at best, unprofessional in the Metaverse. Furthermore, the platform will be able to monitor our bodily movements, physiological reactions, and possibly even brainwaves, as well as our actual and simulated interactions with the environment, to name a few.

4.2 User privacy in Metaverse: Three sectors are particularly important when it comes to user privacy in the metaverse:

- Personal information
- Conduct (Behavior)
- Communications.

Each of these sectors will provide platforms with significantly more data than they already do, along with new and higher risks. For example, personal data gathered from social networking sites are already being used for *doxing*, which is the act of disclosing a victim's private information in order to demand money or to embarrass them online.

How can we prevent doxing given that the metaverse will give its users considerably more private information, not just to the platforms but also to other users?

“The malicious sharing of private residential addresses on social media is a serious problem that can lead to real-world harms including stalking and harassment.” [18]. This brings up the dangers posed by user behavior privacy. In this aspect, the metaverse will present previously unheard-of possibilities for utilizing immersive online experiences and interactions to commit real-world wrongdoings and frauds. As observed during the COVID-19 epidemic, social engineering attacks already make up the majority of cyberattacks experienced online. Social engineering attacks will probably increase in frequency as the metaverse makes them even easier and more effective. The metaverse introduces additional issues with user behavior privacy in addition to social engineering.

Practical examples of this type include spying and stalking. Physical constraints, such as the requirement to be physically close to another person and to relocate to specific locations, which may also involve some expense might make it more difficult to eyes-drop, follow, or harass someone in the real world. These restrictions frequently function as deterrents. These attacks are more likely to happen in the *Metaverse*, where the same

restrictions do not apply. This already is true for a wide variety of attacks that are now common online, some of which are frequently carried out by numerous coordinated individuals, and which will probably increase dramatically in the metaverse. Coordinated raiding and harassment, public humiliation, cyberbullying, and video call bombing are a few of them.

A few examples of these harassments have even made the news:

- The ‘Nazi gas chambers in a metaverse game played by children as young as seven around the world [22] “Figure 4”

In this particular case, we can’t help but notice how malicious these games played in the metaverse can be, not only do they affect children’s mental and psychological state but they also make them become racist and use inhumane ways to solve problems they have with the people in the real world. Inside the game exist gas chambers that are very similar or let’s say replicas of the Nazi Gas Chambers that were places where millions of people found their death. There are Nazi avatars who keep watch of the grounds which include German flags and also the avatars that participate in the game wear Nazi uniforms. Inside the chambers, there were piles of dead and burned avatars which was a horrifying sight and one that could indicate violence to the personalities of the players of this game in the real world.

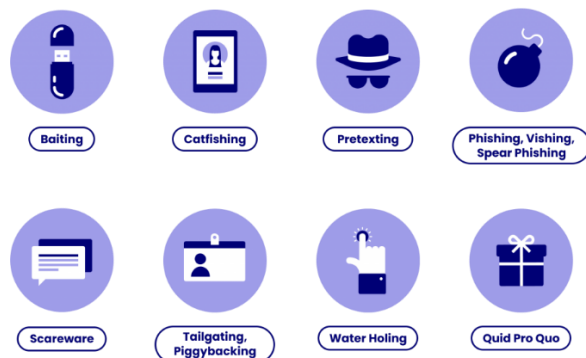


Figure 3. Types of social engineering

‘There are serious safeguarding issues with the trauma this could cause to children. Parents must be aware of what their children are up to online and talk to them about pitfalls, schools must educate children about online harms and the Government must take action against those that host unsuitable platforms and the predatory adults that frequent them.’ [22].

- Woman, is 'virtually RAPED' by a stranger in Meta's metaverse app [21]

While the first case talked about racial harassment this case is a more disturbing one. Just like I have mentioned earlier the Metaverse is just another place where people can go and commit the crimes that they are already committing in the real world but with fewer consequences.

In the metaverse, ethical and moral concerns will arise due to the flaws that it still possesses because the Metaverse is still a work in progress it is not yet finalized. Even though the EULA exists many participants of the metaverse get away with heavy crimes like sexual harassment.

In this article, the researcher logs into the platform, and immediately after one hour of being there her avatar was harassed in a terrible experience where one stranger harassed her and the other one didn't even care about what was happening to her and didn't even intervene. And this was how she explained the experience:

‘It happened so fast I kind of disassociated. One part of my brain was like what is happening, the other part was like this isn't a real body’ [21].

If something like this happened in the real world the consequences of their horrible actions would have been severe but because it happened in a virtual space the responsible company Meta responded:

“We don't recommend turning off the safety feature with people you do not know.” [21] The essence of this is that in these virtual spaces, you have no guarantee that you will be safe from racist slurs, different types of physical harassment, and verbal harassment.



Figure 4. Disturbing game in Metaverse

So what consequences are there in the metaverse if someone is harassed?

Meta introduced Personal Boundary for Horizon Worlds as a solution to the situation mentioned earlier. The functionality, which was described as follows: "makes it easy to avoid unwanted interactions" by preventing people from invading your avatar's personal zone. Such solutions have their difficulties. Users can change their Personal Boundary settings at any time. The personal boundary feature introduced by Meta is kept turned on by default for "non-friends." What happens, though, if a user deactivates their boundary and is sexually assaulted? Is the user at fault here? What happens if someone lacks the computer know-how to navigate the settings? This seems to be the equivalent of informing a woman that she was harassed because of how exposed her clothing was in the digital world. Cyber espionage [24] and cybercrime [25] are also a concern.

When does a person behind an avatar become responsible for their own actions?

These harassments and racial slurs that are happening inside the platform aren't the first and surely won't be the last because the lawmakers aren't trying to create new laws that are adapted to these virtual spaces. Many people would argue that these spaces aren't even real, but the victims of assaults suffer from psychological stress after these virtual assaults take place. Minor fixes like the personal boundary one is not nearly helpful because the metaverse as explained by Mark Zuckerberg is one massive shared virtual space where people should interact and connect with each other and people should be able to communicate with whomever they want to. There need to be laws because only law could draw an end to these horrifying events that are happening in the so-called 'mirror of the real world'.

5. Innovative metaverse application

The concept of the metaverse is still in the early stages of development, so it is not yet widely applied in the real world, among which medicine is still a field to be explored [26], [27]. However, there are a few areas where the metaverse is being used or tested:

Gaming: The metaverse is being used in some games to create shared virtual worlds where players can interact with each other and digital objects in real-time.

Social Media: Some social media platforms are experimenting with the metaverse as a way to create more immersive and interactive experiences for users.

Remote Work and Education: Companies and educational institutions are exploring the use of the metaverse for remote work and virtual classrooms, allowing for more immersive and interactive collaboration.

Virtual Real Estate: Companies are experimenting with the use of virtual worlds as a way to create digital real estate, where users can buy, sell, and rent virtual properties.

Retail and E-commerce: Companies are also experimenting with the use of virtual worlds as a way to create virtual stores, where users can shop and interact with products in a more immersive and interactive way.

Virtual Tourism: Some companies are using metaverse technology to create virtual tours and virtual travel experiences that allow users to explore different parts of the world without leaving their homes.

6. Conclusion

The metaverse is drawing near quickly. Not because a tech and social media titan orchestrated a marketing campaign to avoid public scrutiny or simply because it represents a significant financial opportunity. We are at the beginning of the singularity. Simply because the moment is right. Since technology is advancing at an exponential rate, we now have miniaturized sensing devices with laptop-like computing and communication capabilities, and we are integrating technology into every part of our lives. The metaverse is a term used to describe the concept of a virtual world that is fully immersive and seamlessly integrated with the real world.

This paper discusses the potential impact of the metaverse on society and raises important ethical considerations. It examines the possible economic and social implications of the metaverse, such as the potential for new forms of employment and the creation of virtual communities. The paper also explores the potential for the metaverse to be used for both positive and negative purposes, such as education, entertainment, manipulation, and surveillance. This paper highlights the need for clear guidelines and regulations to ensure the ethical use of the metaverse and to protect the rights and privacy of its users. Overall, the paper argues that while the metaverse holds great promise, it is important to consider the potential consequences and proactively address ethical concerns as this technology continues to develop. The paper also delves into the concept of identity in the metaverse and how it relates to a real-world identity. It discusses the potential for users to create and inhabit avatars, each with their unique characteristics and personalities. This raises questions about the relationship between virtual and real-world identity and the potential for users to escape their real-world identities and engage in different forms of behavior in the metaverse.

The paper also examines the implications of this for issues such as privacy and consent. Additionally, the paper explores the potential for the metaverse to be used as a tool for innovation, training, and professional

development. It argues that the fully immersive and interactive nature of the metaverse makes it well-suited for these purposes and could provide new opportunities for learning and skill development.

Nomenclature

EULA End-user license agreement

MUDs Multi-User Dungeons

MUSHs Multi-user Shared Hallucinations

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