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**A REPORT ON**

**METAVERSE: The New Reality**

**FIRST YEAR OF ENGINEERING (COMPUTER ENGINEERING)**

##### SUBMITTED BY

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**Certificate**

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**Date: / /2022**

**ACKNOWLEDGEMENT**

It gives us great pleasure in presenting the preliminary project report on ‘METAVERSE: The New Reality’.

I would like to take this opportunity to thank my internal guide **Dr. S.S. Raskar** for giving me all the help and guidance I needed. I am really grateful to them for their kind support. Their valuable suggestions were very helpful.

I am also grateful **to Prof. N. F. Shaikh**, Head of Computer Engineering Department and **Dr. D. S. Adkar**, Head of First Year Engineering Department **MESCOE, Pune** for his indispensable support, suggestions.

In the end our special thanks to **Prof. Nita Mhaske** for providing various resources for Our Project.

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**1. Introduction**

**1.1 Overview**

In 1838 scientist Sir Charles Wheatstone outlined the concept of "binocular vision," where you combine two images — one for each eye — to make a single 3D image.

This concept led to the development of stereoscopes, a technology where you use the illusion of depth to create an image. This is the same concept used today in modern VR headsets.

In 1935 American science fiction writer Stanley Weinbaum published the book Pygmalion’s Spectacles, in which the main character explores a fictional world using a pair of goggles that provided sight, sound, taste, smell, and touch.

The term “metaverse” was first used in Neil Stevenson's 1982 novel, Snow Crash. Stevenson’s metaverse was a virtual place where characters could go to escape a dreary totalitarian reality.

**1.2 Problem Definition**

The term metaverse refers to what might eventually replace the Internet as a single, universal and immersive virtual world using virtual reality (VR) and augmented reality (AR) headsets.

An evolution of the internet, it's often described as online spaces where people can socialize, work and play as avatars. Those spaces are shared and always available; they don't disappear when you've finished using them, like a Zoom call.

The description is so broad that many people say the metaverse already exists in the digital worlds of video games like Roblox, Minecraft and Fortnite, which allow players to gather in 2D environments.

**1.3 Core Technologies Of The Metaverse**

1.3.1 Bloclchain:

No longer just a concept associated with Bitcoin and

cryptocurrency, the blockchain is a critical

component of decentralization.

1.3.2 Artificial Intelligence

Improving the link between the physical world and the digital world requires a certain level of intelligence from machines. Artificial Intelligence is essential for a number of metaverse experiences. It can help with natural language processing, to ensure our machines and robotics can understand us.

1.3.3 Extended Reality

Perhaps the most often-mentioned form of metaverse technology mentioned today, extended reality, or XR involves merging the physical and digital worlds through the use of headsets and devices. With extended reality, we can step into virtual worlds and interact with 3D avatars in communities.

**1.4 Properties**

1.4.1 360-degree digital environment

1.4.2 full-fluged economy

1.4.3 Emphasis on Activities

1.4.4 Interoperability:

(The ability and functionality to shift from one Metaverse to another.)

**2. Literature Survey**

2.1 A COMPREHENSIVE SURVEY ON METAVERSE

Technology joints are paying full attention to Metaverse to make it materialize. With the help of advancement in computing technology, Metaverse will change the virtual world and make it more interactive and embodied before Metaverse controlled the whole economy and technology. There must be attention to some open issues such as ethical norms, privacy, and other issues. This paper reveals basic concepts of Metaverse along with its open issue.

By Mr. Gopala Krishna Shriram

( Software Architect, TX USA)

2.2 A Survey On Metaverse: The State-Of-The-Art, Technologies, Applications And

Challenges

Metaverse has broad development and application prospects. This paper summarizes thework of different countries and enterprises, collects papers related to Metaverse, introducesthe three characteristics of Metaverse's multi-technology, sociality, and hyperspatiotemporality, predicts the first application areas of Metaverse, and discusses its problemsand challenge.

Huansheng Ning，Hang Wang, Yujia Lin, Wenxi Wang, Sahraoui Dhelim,

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2.3 Metaverse Shape Of Your Life For Future: A Bibliometric Snapshot

On a final note, technology giants such as Apple and Google have ambitious plans for materialising the metaverse. With the engagement of emerging technologies and the progressive development and refinement of the ecosystem, our virtual worlds (or digital twins) will look radically different in the upcoming years. Now, our digitised future is going to be more interactive, more alive, more embodied and more multimedia, due to the existence of powerful computing devices and intelligent wearables. However, there exist still many challenges to be overcome before the metaverse become integrated into the physical world and our everyday life. We call for a holistic approach to build the metaverse, as we consider the metaverse will occur as another enormous entity in parallel to our physical reality. By surveying the most recent works across various technologies and ecosystems, we hope to have provided a wider discussion within the metaverse community. Through reflecting on the key topics we discussed, we identify the fundamental challenges and research agenda to shape the future of metaverse in the next decades(s).

By Muhammet Damar

Dokuz Eylul Universty izmir, Turkey

**3. Work Done**

The remarkably wide range of potential use cases for metaverse means it’s only a matter of time before the concept becomes a normal part of reality everywhere, no longer being limited to a few industries such as gaming and entertainment.

3.1 Games

The gaming industry is seen as one of the core investors and popularizers of metaverse technology. Metaverse technology was first implemented in the world of computer games, and this is not surprising, since it allows players to interact with other participants in a single virtual interoperable environment. Top players can earn 1,500 SLP per day on their «Axies», although the SLP to dollar exchange rate is constantly changing.

3.2 Tourism

One of the most forward-looking ways to use metaverse is virtual tourism. Technology lets you travel in a virtual space, so you don’t have to physically visit the locations that excite you. Experts claim that the creation of an immersive digital environment combining virtual and augmented reality will be a breakthrough in the field of virtual tourism. A digital space filled with realistic content may become a product that will, in part, replace traditional tourism.  
  
 We’re already witnessing the start of 360-degree virtual tours. Virtual reality has already gained significant traction in the sector. For example, with the help of Visualize, Thomas Cook launched the Virtual Reality Holiday ‘Try Before You Fly’ service, which allowed potential tourists to visit holiday destinations in virtual reality.

3.3 Education

The educational potential of the metaverse looks just as promising. Metaverse technology is fundamentally changing the approach to learning. The introduction of the metaverse school and virtual learning space will enable people from the most remote corners of the world to receive a quality education in conditions perfectly adapted for the assimilation of new knowledge and experience.

3.4 Fashion And Shopping

A while ago a digital Gucci bag was sold for $4,000 on the platform, an indication that the virtual fashion industry is already becoming a significant source of profit for the leading market players. In light of the increasing popularity of NFTs, the day will come soon when the exclusive virtual collections of all famous fashion houses will be sold for millions of dollars on numerous fashion websites and in virtual boutiques.

Many entrepreneurs these days are keen on the potential of virtual reality, insisting that online shopping will soon evolve from a two-dimensional interaction into an amazing virtual experience. Physical and virtual models can now be purchased at network stores anywhere in the world.  
The collection was developed in collaboration with a South Korean clothing brand, Ader Error. Nike too has boarded the virtual goods train. The company has already opened Nikeland, a virtual showroom on the Roblox gaming platform where visitors can dress up their avatars in Nike apparel and shoes.

3.5 Social Networks/Entertainment.

With a push from some energetic promotion, the metaverse technology will radically change the world of social networks and online entertainment. If social networks and metaverse entertainment platforms currently equate to two-dimensional ecosystems, soon they will evolve into full-fledged metaverses and become separate virtual planets, where people will spend time not chatting or scrolling through the photos, but communicating through their avatars or virtual clones.

And with the arrival of widely available virtual reality tools, we will see an explosive development in this area and a massive transition of users from the traditional web to the metaverses.

3.6 Real Estate

It’s no surprise that in a market niche as profitable as a metaverse property sale this option can be used in order to optimize the display of buildings for sale/rent. Prospective buyers will instead be able to take a metaverse real estate tour, which will be almost indistinguishable from the experience of actually being there on the premises. In addition, augmented reality in the form of popups will make a metaverse virtual real estate site visit even more informative and useful. In the four largest metaverses , virtual real estate sales exceeded $500 million last year, and there is every chance they will reach the $1 billion mark this year.  
  
 At present about 100 Fantasy Islands are being developed in the Sandbox metaverse. Meanwhile, Republic Realm has reportedly paid a record $4.3 million for virtual land.

**4. Results**

**4.1** The METAVERSE is a medium that has the potential to change the world. It

will Allow people to go to places they would never be able to go, explore thing

they would never be able to see, and feel things they would never be able to feel.

The reality that we are currently living in is not the end-all, be-all. We are just a

small part of it. And while it is impotant to explore and understand this reality, what

is equally important is the nature of other realities.

**5. Conclusions**

**5.1 Future Work**

5.1.1 Games

The gaming industry is seen as one of the core investors and popularizers of metaverse technology. Metaverse technology was first implemented in the world of computer games, and this is not surprising, since it allows players to interact with other participants in a single virtual interoperable environment.

5.1.2 Tourism

One of the most forward-looking ways to use metaverse is virtual tourism. Technology lets you travel in a virtual space, so you don’t have to physically visit the locations that excite you. Experts claim that the creation of an immersive digital environment combining virtual and augmented reality will be a breakthrough in the field of virtual tourism. A digital space filled with realistic content may become a product that will, in part, replace traditional tourism.

5.1.3 Education

The educational potential of the metaverse looks just as promising. Metaverse technology is fundamentally changing the approach to learning. Virtual reality can bring the visual component of the educational process to a qualitatively new level, allowing students to ‘live’ a specific experience, which provides more intensive and high-quality assimilation of knowledge than traditional classroom training.

5.1.4 Fasion

As one of the most progressive areas of the economy, the fashion industry is actively introducing new trends related to the metaverse technology. The most striking example is Gucci, which created the “Metaverse design” category on Roblox. Users can already buy exclusive outfits from the famous fashion house on the gaming platform.

5.1.5 Social Networks/ Entertainment

With a push from some energetic promotion, the metaverse technology will radically change the world of social networks and online entertainment. This is because in the metaverse users get a much deeper immersion in the digital space than in the traditional messengers and blogs.

If social networks and metaverse entertainment platforms currently equate to two-dimensional ecosystems, soon they will evolve into full-fledged metaverses and become separate virtual planets, where people will spend time not chatting or scrolling through the photos, but communicating through their avatars or virtual clones.

**5.2 Advantages**

5.2.1 Connecting the world and neglacting physical distance.

Once you’re in the virtual world, your physical location doesn’t matter anymore and you are no longer bound by it. The metaverse will act as a neutral space where everyone can meet as equals to some extent.

5.2.2 Immersive experience.

Think of the metaverse as a 3D upgrade to the traditional way of using the internet. The big advantage of the metaverse is that you are more enveloped in whatever activity you’re doing. You can exercise, socialize, play games, and have business meetings in a virtual environment.

5.2.3 Upgrading social media.

Social media is probably the biggest term used in the past decade. Platforms like Facebook and Twitter rely on the social aspect of the internet. And they will undoubtedly benefit from the upgrade into a three-dimensional virtual environment.

5.2.4 New business opportunities.

This means that you can see the product, hold it, and even feel it using haptic technology.

5.2.5Improvements to online learning and education.

In addition to that, since we have full control over what the students see inside the metaverse, conveying ideas and concepts will be easier with visual learning. As the students will be able to experience historical phenomena right in front of them instead of theoretically.

5.2.6New opportunities for financial gain.

Whenever there’s a new technology, people will always find ways to make money from it. Some people are investing in digital real estate, which are plots of land within the metaverse, hoping that in time virtual land will appreciate in value. Some are looking into metaverse crypto trading, which also has the potential to rise up in price and render any early investors millionaires. Furthermore, many people are earning money in the metaverse by playing games that reward you with tokens and NFTs, which you can exchange for money.

**5.3 Disadvantages**

5.3.1 Privacy and Security Implications.

Considering their previous history with privacy concerns of their users, that doesn’t simply fade away with their name change.

5.3.2 Health Concerns.

Beyond all the social connection, entertainment, and business sides of the metaverse, there stands a serious risk on mental health for metaverse users. Despite the use of virtual reality under controlled environments to help patients with schizophrenic symptoms, we cannot count on the metaverse to be controlled or crafted to help people with these illnesses.

5.3.3 Addiction problems.

Some argue that there is a bigger addiction risk with the metaverse, as you’re fully immersed in a virtual world. It will be a big challenge to balance allowing teenagers and adults enough time in the metaverse while trying to prevent addictive behavior.

5.3.4 Losing connection with the physical world.

One major concern that many people have about the metaverse is how easy it is to lose track of time while you’re in it. People who are exposed to the metaverse for too long might lose their attachment to reality and may go beyond that—to not wanting to acknowledge the existence of a world besides the virtual one.

5.3.5 Virtual bullying.

The internet is known to be a harsh place, and strangers tend to be cruel and not accepting of people’s differences. Malicious behaviors towards others can be found in all parts of the internet, whether it be on social media or in games. Taking the internet into a 3D setting and letting users feel fully immersed in the metaverse will give these bad actors more power.

**5.4 Problems Or Concerns**

5.4.1 Threatening user privacy.

5.4.2 Rise of phishing attacks

5.4.3 User addiction to social media.

5.4.4 Cybercrime is a serious problem.

5.4.5 Money laundering.

5.4.6 Child exploitation, illegal goods.

5.4.7 Services trafficking

**5.5 Applications**

5.5.1 Business Communication & Optimized Productivity

5.5.2 Revolutionized Online Education

5.5.3 Futuristic Blockchain Applications

5.5.4 Future Of Payments

5.5.5 Future Of Entertainment

**5.6 Conclutions**

5.6.1 like social media, gaming, content creation, and other advanced technology

serves vital advantages for the metaverse.

5.6.2 On the other hand, the concerns of privacy and security alongside requirements

of advanced technologies emerge as notable metaverse pitfalls. The observation

of the pros & cons of the metaverse gives a balanced idea of what the metaverse

is and what it could be. Metaverse enthusiasts and institutions should take note of

both sides of the metaverse before passing the final verdict.

5.6.3 The promise of an immersive online experience with different elements

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