iJRASET
International Journal For Research in Applied Science and Engineering Technology



INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 10 **Issue:** I **Month of publication:** January 2022

DOI: https://doi.org/10.22214/ijraset.2022.40044

www.ijraset.com

Call: 08813907089 | E-mail ID: ijraset@gmail.com

International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 10 Issue I Jan 2022- Available at www.ijraset.com

Humans Emerging beyond Universe with Metaverse, is it possible? How?

Samreen Sadiya,
Electrical and Electronics Dept., VNR Vignana Jyothi Institute Of Engineering and Technology Hyderabad, India

Abstract: ***In recent years, the metaverse has attracted enormous attention from around the world with the development of related technologies. The expected metaverse should be a realistic society with more direct and physical interactions, while the concepts of race, gender, and even physical disability would be weakened, which would be highly beneficial for society. However, the development of metaverse is still in its infancy, with great potential for improvement. Regarding metaverse's huge potential, industry has already come forward with advance preparation, accompanied by feverish investment, but there are few discussions about metaverse in academia to scientifically guide its development. In this paper, we highlight whether it is possible for mankind to be able to emerge beyond universe with metaverse. Then we propose a nine-layer metaverse architecture from a macro perspective, containing experience, discovery, creator economy, spatial computing , decentralization, human interface, infrastructure, virtuality, and ecosystem. Moreover, we journey toward both a historical and novel metaverse, on how metaverse helps humans to not just watch internet but enter into it, with a detailed timeline and table of specific attributes. Lastly, we illustrate our implemented blockchain-driven metaverse prototype of a university campus and discuss the prototype design and insights. the most common conceptions of the metaverse stem from science fiction. Here, the Metaverse is typically portrayed as a sort of digital " jacked-in" internet-a manifestation of actual reality, but one based in a virtual)often theme park-like)world, such those portrayed in Ready Player One and The Matrix. And while these sorts of experiences are likely to be an aspect of the Metaverse, this conception is limited in the same way movies like Tron portrayed the internet as a literal digital "information superhighway" of bits.***

Keywords: nine-layer metaverse, Tron, blockchain-driven, development, potential to improve .

I. INTRODUCTION

Since the late 1970s and early 1980s, many of those in the technology community have imagined a future state of, if not quasi-successor to, the Internet – called the "Metaverse". And it would revolutionize not just the infrastructure layer of the digital world, but also much of the physical one, as well as all the services and platforms atop them, how they work, and what they sell. Although the full vision for the Metaverse remains hard to define, seemingly fantastical, and decades away, the pieces have started to feel very real. And as always with this sort of change, its arc is as long and unpredictable as its end state is lucrative.To this end, the Metaverse has become the newest macro-goal for many of the world's tech giants. As I outlined in February of 2019, it is the express goal of Epic Games, maker of the *Unreal Engine* and *Fortnite*. It is also the driver behind Facebook's purchase of Oculus VR and its newly announced Horizon virtual world/meeting space, among many, many other projects, such as AR glasses and brain-to-machine interfaces and communication. The tens of billions that will be spent on cloud gaming over the next decade, too, is based on the belief that such technologies will underpin our online-offline virtual future.

II. WHY?

A lot of people would argue that the Internet is one of the greatest inventions ever. You have all the knowledge in the world at your fingertips, but it still has a very small drawback. It is not very interactive. Imagine if instead of seeing the Internet on screen, you could actually enter it and perceive it as your environment. And this brings in the concept of the Metaverse coined by Neil Stevenson in his novel Snow Crash.

The Metaverse refers to a collection of virtual reality rooms which are connected to a perceived virtual universe. Similar to the Internet. The word meta verse is made up of the prefix meta, which means beyond and the stem verse, which is a back formation from the word universe.

The term is typically used to describe the concept of a future iteration of the Internet, made up of persistent, shared 3D virtual spaces linked to a perceived virtual universe. The Metaverse, in a broader sense, may not only refer to virtual worlds, but the Internet as a whole, including the entire spectrum of augmented reality.

©IJRASET: All Rights are Reserved

ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 10 Issue I Jan 2022- Available at www.ijraset.com

III. 8 LAYERS OF METAVERSE

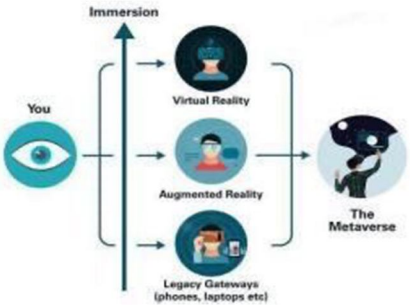
Moving from a set of independent virtual worlds to an integrated network of 3D virtual worlds or Metaverse rests on progress in four areas: immersive realism, ubiquity of access and identity, interoperability, and scalability. For each area, the current status and needed developments in order to achieve a functional Metaverse are described. Factors that support the formation of a viable Metaverse, such as institutional and popular interest and ongoing improvements in hardware performance, and factors that constrain the achievement of this goal, including limits in computational methods and unrealized collaboration among virtual world stakeholders and developers. So, Here are the nine layers of Metaverse that can help humans to understand the virtual world.

A. 8. Metaverse as an Infrastructure

The metaverse is not an application that runs on top of a service. It's not a world, and it's not a game. It's the next iteration of the internet that supports real-time experiences. The metaverse is infrastructure. The internet was born in the early 1970s as a way for the military to reliably share information between computers engaged in defense research scattered across the country. Since that time, consumer demands continue to grow, but the internet was never designed for real-time interactions. The next generation of real-time applications requires a network that prioritizes delivering data quickly. And the metaverse will be a new iteration of the internet that supports a collection of real-time applications and experiences across devices.

B. 7. Humans experiencing Virtuality

I.As trust in the "virtual" field continues to increase—online friends, virtual items and encrypted assets, smart contracts, and online experiences—it will increase the scalability of Metaverse and the industries that support it. But in any major trend, there is often a counter-trend; as people pay more and more attention to the virtual world, it will encourage those who try to take advantage of it. Unfortunately, cybercrime is an example that many people are familiar with: phishing to steal your account, various online frauds, ransomware attacks and spreading malware, etc. Because people believe that virtual relationships and property are real, online bullying, abuse, game cheating, and relationship cheating all add to the harm. As more value is given to these behaviors, these behaviors will proliferate, and so will the investment of companies that aim to combat crime and abuse. Products alone cannot solve these problems. It also requires education, training, virtual literacy, supportive communities and understanding parents.



C. 6. Decentralized Metaverse

Facebook's move into the metaverse signals that the mainstream world is moving towards embracing this new stage. We must ensure that the metaverse is based on a Web3 that is multi-chain interconnected and decentralized. Decentralized technologies will be key for this process and for ensuring that user privacy and security are protected.

D. 5 Spatial Computing

Spatial computing is the ability to have content persistent

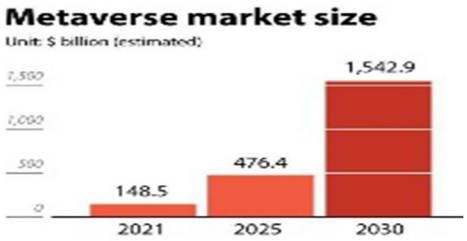
Over the world geo synchronously and in flawless volumetric 3D.former Magic leap SVP Creative strategy John Ghaeta. Explained in an interview with IBC 365."There will be various and infinite types of digital overlays on the real world. These layers will bridge the physical and the digital worlds. Magic leap even trademarked the term "Magicverse" to describe the layers which it thinks will populate the space between the real and digital world. "The Metaverse will be an all-embracing fabric of interconnected services that appear to us either as a layer of data and 3D images to augment our visual field", agrees Shapton, "or a completely immersive environment where we can indulge in fact or fantasy , or anywhere in between. It will be our choice how to engage with it".

©IJRASET: All Rights are Reserved

E. 4. Real World Economic Activity

The metaverse is also expected to have a strong connection with the real-world economy – and eventually become an extension of it. In other words, the metaverse must have the ability for companies and individuals to participate in economic activity in the same way they do today. Simply put, this means being able to build, trade and invest in products, goods and services.

To a certain extent, this may rely on non-fungible tokens (NFTs) as the foundation for value creation. A NFT is a claim of ownership for a unique, non-interchangeable digital asset that is stored on a blockchain. If NFTs become a commonly adopted tool for trading such goods, they could help accelerate the use of XR ecosystems as places people go to combine elements of the digital economy with their offline lives.sOne way to think of this process is how the App Store encouraged businesses to digitize their operations, so that consumers could experience (and pay for) their products and services from any location. This legitimized the idea that retail and digital need not be separate, paving the way for a whole host of use cases that might not initially have made sense.



F. 3. Exploring and Discovery

There are lots of discussions about being able to create "digital ghosts," or "copies" of complex machinery to be able to run tests, and what not on them. Once this is achievable, in conjunction will real-time mapping and the help of future tech, uncover answers to unknown questions of the coming future, but also questions of the past. The metaverse, fueled by emerging technologies, cryptocurrencies and the blockchain, will continue to evolve rapidly over the next decade. For now, it is home only to creators and explorers – there are few actual inhabitants. It will require a rapid shift in behaviors to unlock the true potential of people spending time living, working and playing in the metaverse.

G. 2. Human Interface

Human interface refers to the hardware that helps us to access the metaverse, everything from mobile devices to VR headsets to future technologies like advanced haptics and smartglasses. Technology can augment the world around us, it can enhance the human experience, our capabilities, and also extend our reality to digital and virtual worlds. As people flock online during quarantine we now find ourselves experimenting with new platforms, pushing immersive technologies to the limits, and collaborating in new ways; from eye-tracking technology and facial tracking to biometrics and brain-control interfaces.

H. Experience

What Jobs Does the Metaverse Do?

By its very nature, the experiences of the metaverse will extremely vary. First, let's examine all of the roles the metaverse will inherit.

1) *All the Jobs of Television:* For almost 100 years television kept us informed, provided education, a live view of sporting events, brought stories into our living room and offered antidote to boredom. The internet does these now and that will continue in metaverse-augmented by an exponential rise in creators.
2) *Transactions to Activities:* The current internet is mostly about transactions and access to information. As the metaverse expands to include immersive learning, shopping, education, travel and other undreamt of applications, it will become more activity oriented.

IV. ALL THE JOBS OF THE INTERNET

It should also be obvious that the internet does a lot more jobs than the ones originally done by television. It also sells us stuff, provides a platform for software applications, enables marketplaces, and facilitates collaboration. As I'll explain below, the metaverse will enhance all of these by simplifying the process for creators and embedding more experiences within immersive settings.

ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 10 Issue I Jan 2022- Available at www.ijraset.com

V. PROPERTIES OF METAVERSE

The Metaverse is really Internet 3.0. How is it qualitatively different from the internet we have now?
I think it is useful to think of the metaverse both as a thing as well as a process. It is already here. The process of building the metaverse is being driven by:

1) *Activities:* Mainstreaming of immersive experience — those where you don't simplify look at pages and apps, but engage in activities with others within places**.**
2) *Creator-driven:* Both the tools to create our own activities, as well as creator economies that enable users to add content to them, will enable non-technical folks to shape the metaverse.
3) *Embedding and Linking of Emergent Content:* Just as hyperlinks and embedded content became the connective tissue of prior generations of the Internet, the ability to bridge and layer elements of the immersive internet together will power the next emergent wave of innovation. We may need new terms — hyperportals and hyperstreams?

VI. USE CASES OF METAVERSE

A. Social Experiences

Building on much of the technology that enabled virtual worlds in games, the metaverse will give us the ability to socialize through activities rather than simply socializing through sharing photos and news links.

B. Immersive Commerce

The largest successes in ecommerce so far have been around lower-touch, self-directed buying.
Traditional retail still excels at situations where high-touch, pour-you-a-tea and consulting on your purchase is appreciated by the consumer. Is this where immersive commerce in the metaverse might take off

C. Automotive

Cars have long been a fascination of videogames, and of course that will continue in the metaverse. The metaverse will bring a huge number of new uses cases to the automotive industry as well.

D. Collaboration

We already collaborate through tools like Zoom, Slack and Discord. But in the future, greater immersiveness will enable coworkers to participate in ways that are still challenging through existing technologies.

E. Real Estate

Although I suspect it will be a while before people starting buying a home exclusively through VR — it will likely become a significant way people prescreen the properties they are interested in visiting — as well as revisiting and examining the augmented information about a property.

F. Learning and Education

Although we struggled to replace education with Zoom and Google Classroom during the pandemic, our technology options were limited. That will change in the future as the metaverse transforms education to be more immersive, more social. It will enable amazing educators from anywhere to lead — equipping them with tools for their creativity— and draw upon everything that's been learned from games to make the experience more fun and interesting.
This will impact everything from traditional education, to corporate training, to skill-based learning (like how to fix your dishwasher with augmented reality).

G. Fitness

I don't think I'll ever visit a gym again. During the pandemic, I started meeting with my personal trainer on Facetime twice per week. Supernatural VR has brought fitness into the world of the metaverse by making it more interactive and more social.

H. Immersive Theater and Transforming the Physical World

Most of what I've written above is entering entirely digital spaces — but the metaverse will also include activities within spaces we physically travel to; in these, we'll bring the metaverse with us.

©IJRASET: All Rights are Reserved

ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 10 Issue I Jan 2022- Available at www.ijraset.com

The Internet of Everything will feed data, geospatially-triggered content and digital twins into the metaverse — letting us comprehend, manipulate and simulate the real world in new ways that save us time, and unlock new possibilities in our lives and businesses. The industrial, travel, military, civic and residential applications of making this information omnipresent is infinite.

VII. IS IT POSSIBLE?

In the past few months, nearly every tech journalist and publication has tried to produce articles explaining what the Metaverse is, what it could be, and its potential. But very few seem to be exploring whether the Metaverse is even possible. The Metaverse could be a place of life-changing experience and interaction, an economic powerhouse that dwarfs the current Internet and a place of creativity unleashed**.** And while preparing for these opportunities is great, it'll be how the tech industry overcomes problems and what compromises they make that will truly shape the future. Yes, the Metaverse is possible. But corporate greed, human nature, infrastructure restrictions, and the laws of physics will lead to comprises. '*Persistent, shared, 3D virtual spaces linked into a perceived virtual universe'* can and almost definitely will be created; they just might not look quite how you imagine.

Corporate greed and consumer apathy will lead to walled gardens in the name of convenience and so-called safety. These will be torn down as competing products offer more interoperability, shifting the convenience balance, only to rise again somewhere else.

But most critically, for the Metaverse user experience long term, there is only so far new technology and infrastructure improvements can go to reduce lag in long-distance interaction. And this means users may prefer to use regional Virtual Worlds day-to-day and only use global platforms on an as-need basis.

No matter how much technology advances, it can't surpass the speed of light.

VIII. HOW?

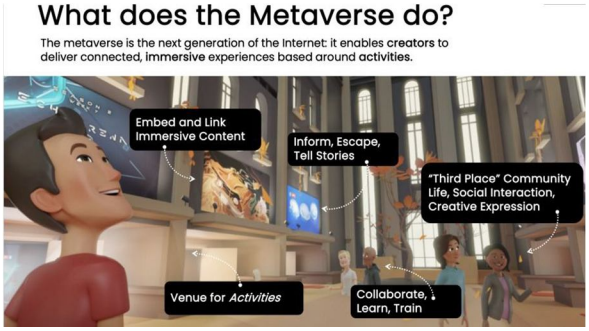
A. Metaverse Impacting on Business

Metaverse is going to the way businesses market their products and services. So, companies need to change their existing marketing and advertising strategies. Since metaverse will offer a shared virtual economy, businesses need to plan their marketing strategies accordingly. One of the most crucial things for businesses to understand is the consumer preference in the metaverse.

Since it's a completely new experience for everyone, it's hard to predict what consumers will like or dislike. It's going to be different because people can prefer different virtual spaces than they like in real life. Many experts suggest that brands need to ensure that they follow the marketing ethics and become responsible, and don't make it a giant ad

B. metaverse Impacting on Story Telling

Since almost every business today has adopted content marketing to promote their product and services, the metaverse can give an excellent opportunity for immersive storytelling. Brands can take advantage of the metaverse to the ability of deep immersion to build affinity.



C. Metaverse Impacting on Culture

Another impact within the metaverse is the culture of marketing and advertising. Within the metaverse, it's important to build a culture because marketing, digital, and world-building have a great impact on brands.

It's essential to consider the fact that people aren't going to wander in the metaverse. They will have friends, relationships, and that can impact their decisions. So, brands need to understand how people behave and interact with others. Consumers won't be talking about brands in the way they talk on social media anymore; they will talk in the 3D form.

©IJRASET: All Rights are Reserved

D. Metaverse Impacting on Shopping

You must have ordered something online; it can be your clothes, groceries, or other stuff from an eCommerce store. However, people will build their own virtual avatar; they will buy skins, clothes, homes, and more in the metaverse in the future.

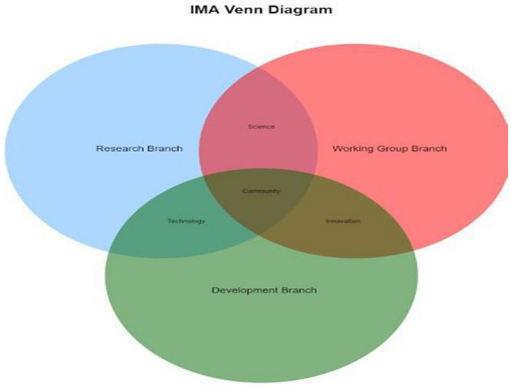
So, brands need to build such things based on consumer preference in the multiverse.Fashion is one of the most important aspects of creating a virtual avatar. So, this is a great opportunity for digital

creators who can bring epic fashion avatars and designs to consumers. It's a whole new market for digital creators

E. Metaverse Impacting on Entertainment

The entertainment industry is also going to differ in the metaverse. In the real world, celebrities and players are popular in the entertainment industry. A recent study shows that streamers who are friends in the real world are going to become friends in the metaverse.

Brands need to consider one thing that they cannot hide behind the scenes in the metaverse. They need to be approachable and personable because people will want to make a connection with brands. However, it won't necessarily mean that they want to buy a product or service.



IX. CAN THE WORLD GET ACCUSTOMED?

We might get accustomed to metaverse, but they are a lot of people going against metaverse.as, it takes away their real life engagement from them maybe forever. Elon Musk has tweeted a meme trolling Facebook founder Mark Zuckerberg's plans to launch a 'metaverse' following the Facebook name change.

Musk tweeted the image, which reads: "If you die in the metaverse, you die in real life," as part of a chain of memes started by Niche Gamer mocking Zuckerberg.

X. CONCLUSION

It is being built around activities you'll enjoy with your friends and coworkers. An exponential increase in creators are mixing-and-matching, embedding and linking, leveraging a new era of creator-oriented tools. But, for now, the metaverse is mostly the hope of a few, a speculation, a fantasy with many gaps to let the chill winds of the unknown to blow through.

As, It diverts you from real life, everything about it, is based on computerized system which is not the natural way of human beings to work.When we meet a person in real life, we see a lot of stuff, theres a eye contact which signifies the persons attractions/ distraction, we shake hands, we get to know something. ut of the box which sometimes the person is not known to himself. Apart from physical, we feel his energy and presence even if you don't realise it, but we do, vibes stuff we call it.Being on a virtual world, its just the idea that you are talking to this person, with his pictures like this. You don't even know in what ways the things have been said to you. Like try saying a line or whatever in different pitches we get to know the persons, intentions or type to specific, one like said in different pitches can mean different to you. Most Importantly, The metaverse is being seen as the convergence of physical and digital worlds. The metaverse is the next generation of the internet. It will take you to places you never imagined

XI. ACKNOWLEDGMENT

This paper was only possible because of the great talks and papers of anshul rustaggi and all thanks to Mark Zuckerberg for revolutionising the virtual world which might lead us to a greater path in the future.

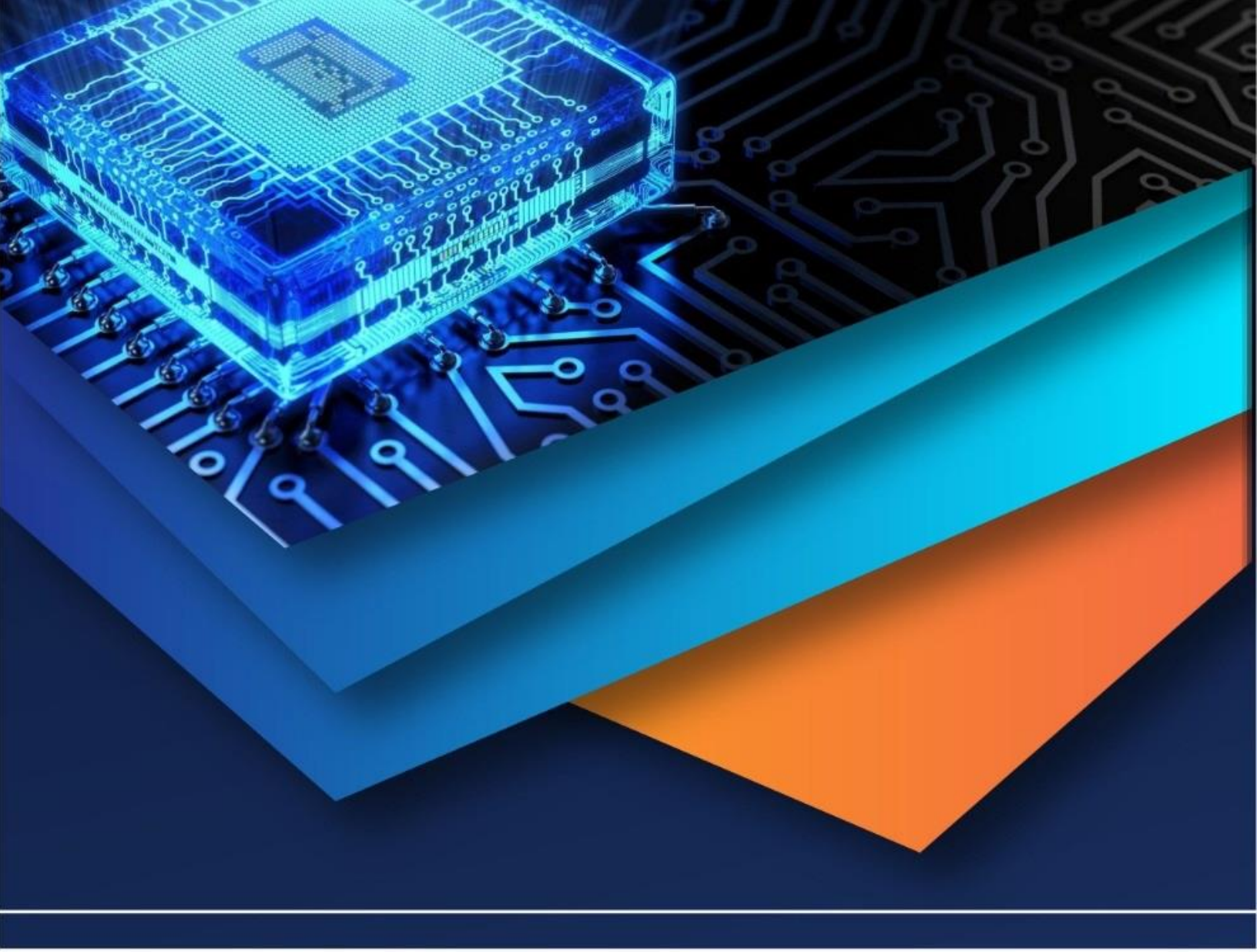
©IJRASET: All Rights are Reserved

ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 10 Issue I Jan 2022- Available at www.ijraset.com

REFERENCES

[1] Metaverse explanation and oppurtunities https://youtu.be/VNx30ZVKDOY
[2] Metaverse-how we'll build together https://youtu.be/Uvufun6xer8
[3] What is metaverse and exploring it https://in.mashable.com/tech/25780/what-is-the-metaverse-a-kind-of-simple-explainer
[4] Connection is evolving and so are we https://about.facebook.com/meta/
[5] Understanding metaverse https://www.meta.org/
[6] Everything facebook releases about metaverse https://youtu.be/gElfIo6uw4g
[7] A 22 year old breaks down how to join metaverse https://fortune.com/2021/12/07/how-i-signed-up-metaverse/

©IJRASET: All Rights are Reserved | SJ Impact Factor 7.538 | ISRA Journal Impact Factor 7.894 |



10.22214/IJRASET

45.98

IMPACT FACTOR: 7.129

IMPACT FACTOR: 7.429

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Call : 08813907089 (24*7 Support on Whatsapp)