



KALINGA INSTITUTE OF INDUSTRIAL TECHNOLOGY

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SCHOOL OF ELECTRONICS ENGINEERING



METAVERSE

*Presented to
DR. Arpita
Goswami*





PROFESSIONAL COMMUNICATION ASSIGNMENT





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Hello!

We the students of group F are here to explain more about METAVERSE, it's advantages, disadvantages and various applications.

HOPE YOU ALL WILL LIKE OUR EFFORTS!



The slide features a decorative border on the left side composed of various hexagonal icons in shades of blue and cyan. These icons include a lightbulb, a thumbs-up, a network or molecular structure, a smartphone, a magnifying glass, a gear, and a speech bubble.

1

What is METAVERSE?

A metaverse is a network of 3D virtual worlds focused on social connection. In futurism and science fiction, the term is often described as a hypothetical iteration of the Internet as a single, universal virtual world that is facilitated by the use of virtual and augmented reality headsets.



A SNEAK PEEK FROM HISTORY BOOKS!!

The term “metaverse” first appeared in the 1992 science fiction novel “Snow Crash” by Neal Stephenson. The story is set on a futuristic backdrop wherein humans interact with each other and software agents as avatars in an internet-like and online-enabled virtual space. Stephenson specifically described this virtual space as the metaverse, and it represented his vision of the future evolution of the internet based on virtual reality technology.



How it started?

- ◆ The first Metaverse Roadmap Summit held in May 2007 envisioned that the internet in 2016 would evolve into an all-encompassing digital playground that would immerse people in a myriad of highly accessible and on-demand digital information.
 - ◆ Some of its participants include Robert Scoble from Microsoft, former Sony Online Entertainment chief creative officer Raph Koster, Bob Moore of Xerox Palo Alto Research Center, and game developer Randy Farmer.
 - ◆ **The summit concluded four imagined scenarios of what the metaverse would be like or its most likely outcomes: dubbed augmented reality, lifelogging, virtual worlds, and mirror worlds.**
- 



BIG concept and the present scenario!

In October 2021, Mark Zuckerberg announced that Facebook has changed its company name to Metaverse Platforms to steer away from being identified as a mere social media platform and represent its direction toward deploying its own version of the metaverse. The company envisions a hybrid of the current online social experiences that can be expanded into three dimensions or projected into the physical world.

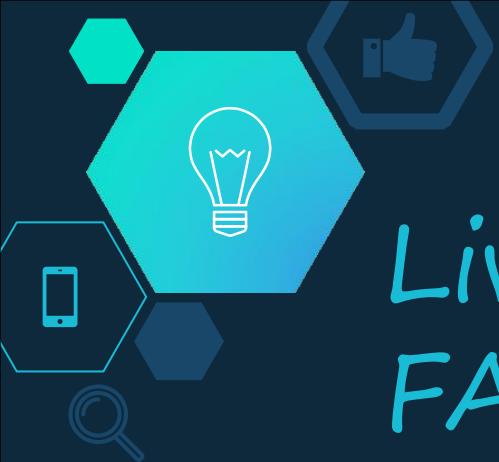


1

EXPERIENCES

In Metaverse





Live your FANTASIES



- ◊ Play your favourite virtual game with real physical actions
- ◊ Play Chess in any corner of the world
- ◊ Do any adventure sport or a simple bike ride
- ◊ Etc.

All with incredible realism but also within the comfort and safety of your house.





2



EXPRESSION

Express yourself in the way you want



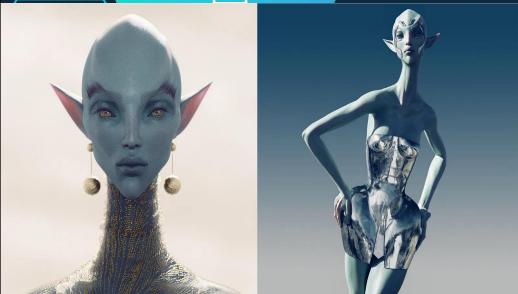
AVATAR

A 3D living depiction of
you





Be Anything With Your Avatar

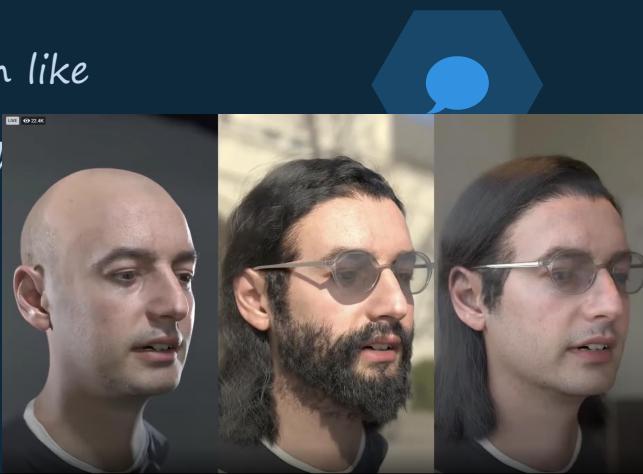


- ◇ Any Height
- ◇ Have Any Specific Physical Feature
- ◇ Any Gender
- ◇ Any Race
- ◇ Any Creature



Realism in Avatar

- ◇ Not Cartoony Image but Real Human like avatar
- ◇ Meta working on Life like avatar tech
- ◇ Experience like Real Life





No Limitation to Anyone

- ◆ NOT being Constrained by the Body that you're Born in
- ◆ NO Physical Incapability
- ◆ NO Disability
- ◆ Able to be what you WANT to BE
- ◆ Able to do what you WANT to DO





3. Anxiety & Depression

- ◊ Studies in the past years show that “overuse of digital technology is associated with many mental health issues, such as somatic symptoms (6%), depression (4%) and serious mental illness (2%).” It also has the possibility of making people lose track of time.
- ◊ These numbers are more than likely going to increase with the further development of the Metaverse.





4. May Erode Human Relationships and the Society



- ◊ Users can become isolated and dependent on the use of VR. They can become antisocial and lose basic social skills, which can then form into social anxiety and other mental health problems.”
- ◊ The Metaverse is building a world where digital life matters more than the physical one - which is telling of how we see ourselves.



5.Denying Reality

- ◊ In Metaverse, one user can decide to remove some real things from their Metaverse just because they don't like it. Point is, users can easily deny reality and build a different world in the Metaverse and that is a problem.
- ◊ Well, think of a moment when they come out of that virtual world, they'll have to deal with these things. They can't stay in the virtual world forever.





Metaverse: Teleportation

Cast your mind ten years into the future. The internet, as you know it, has changed. It has become embodied. You do not just view or listen to content, ***you are in it. You are the content.*** Your friend living on the other side of the world can pop onto the sofa next to you as a hologram, seeing and hearing the same things as you. Perhaps the pair of you decide you want to see your favorite band play live in your living room. You pick *The Beatles*. A few clicks and John and Paul are warming up in front of you.

That is Metaverse Teleportation for you.

Teleportation in the **Metaverse** is the act of users moving from one place to another without having to be physically there or use any physical means of transportation.





How will Teleportation work in the Metaverse?

“The metaverse could make reality disappear.”

This is just as simple as a click on a link in your browser. Once you click the link you'll be in the space created by the host and start having a normal conversation as if you're there with the person or the host.

The metaverse itself is pretty much a teleportation given the fact that you'll have to move into this virtual reality space while you're physically at home. According to Mark Zuckerberg, while in the metaverse, users can create a space of their own and invite others to join.

While Meta is referring to this as a Teleportation, the right word is an “Advance Video” conferencing.



Benefits of Metaverse

Teleportation:

- Host can create any type of space he feels like creating. The only limitation is his/her imagination.
- Employees don't have to be stuck in traffic or travel through long routes to attend a business meeting. They can do so from home.
- A friend can invite you to a concert or party anywhere in the world.
- Flight ticket, bus ticket, train tickets will be converted to data for streaming. This might not necessarily be cheaper but it's definitely more convenient.
- This can also mean better environment as people will travel less often and less carbon dioxide will be released. It can actually be good news for our environment.
- Meetings can be held at an instant by just clicking a link.

KNOWLEDGE



Metaverse will drastically change how we seek knowledge. It will enable us to learn things by looking at them in a 3-Dimensional environment and interacting with virtual objects.

Metaverse will enable to travel not just to any place, but also to any time (even to the time when the earth was just a huge rock). People will be able to witness all the great historical battles and developments happen right in front of their eyes with the help of AI.

- Metaverse will play a big role in many industries as it will help automate a variety of processes. People wont have work in hazardous environments. All the processes could be monitored from a single place.
- Metaverse will enable faster development at the cost of less resources. Instead of creating prototypes, researchers will be able to create a simulation and improve the product.
- In the field of medicine, training the students would get easier as they would be able to see the inner workings of a human body. It will also help in proper assessment of the ailment and the required treatment. Complex surgeries will be possible with the help of robots.



GAMING

Gaming has always been a prime candidate for virtual reality (VR). Now, as companies like Meta and Epic Games attempt to build a connected universe of virtual realities, gaming has a new home.

In addition to making gaming more immersive through AR and VR, the metaverse should also result in better engagement, virality, and monetisation for games. In shooter games and RPGs, players will experience the games as if they are present in the battlefield.

A key component of the metaverse economy will be NFTs. The virtual gaming world rewards gamers for spending their time and creativity in-game, enabling them to monetise time spent in the metaverse. With the platform forging partnerships with countless IPs, players have the freedom to create, sell, and own NFTs.



Productivity

Metaverse Can provide a suitable virtual environment to work without disturbances.



- The work can be input faster by using voice or gestures by using electromagnetic currents from the brain.
- Metaverse is also working to send input using electrical nerves from our body to send data

VR advances by metaverse

- VR devices are known to be very heavy and clunky and is known to cause headaches when used for prolonged periods of time.
- Metaverse is launching their new headset in 2023 which solves most of the problems of current VR headsets.
- Also comes with realtime facial expression technology for realistic conversations.



Old VR technologies
(very bulky)



3D teaser model of Project
Cambria
(Less bulky and light weight)





Existing technologies like metaverse

- The concept of a virtual world has existed from years before the existence of metaverse , but not very successful due to lack of resources and funds.
- Speculations are that metaverse is going to merge these technologies to include their audiences.
- Some of the pre-existing technologies include VR chat,virtuali,lightform etc.

Environmental impact of Metaverse



The metaverse looks likely to reach into every corner of our lives. But the environmental costs from AI workloads that will arise from running the metaverse on a large scale will be huge.

Positive Impact of metaverse on environment

The biggest environmental benefit is that it will reduce the human need for travel. Eliminating commutes will reduce air pollution and the warming of the planet. Electric vehicles (EVs) also help reduce carbon emissions, but they do not solve problems like congestion.

According to a report by US-based news website CleanTechnica, metaverse will help reduce other job-related activities that are heavily polluting.

Metaverse could be used to perform military training exercises such as pilots flying combat aeroplanes in the virtual world, thereby reducing emissions.

Another impact of the metaverse could be in saving lives by reducing accidents that occur during training to perform dangerous tasks.

Worldwide, flights produced 915 million tonnes of CO₂ in 2019. Globally, humans produced over 43 billion tonnes of CO₂.

But due to the metaverse technology, amount of CO₂ released will be less.



Negative impact of Metaverse on Environment

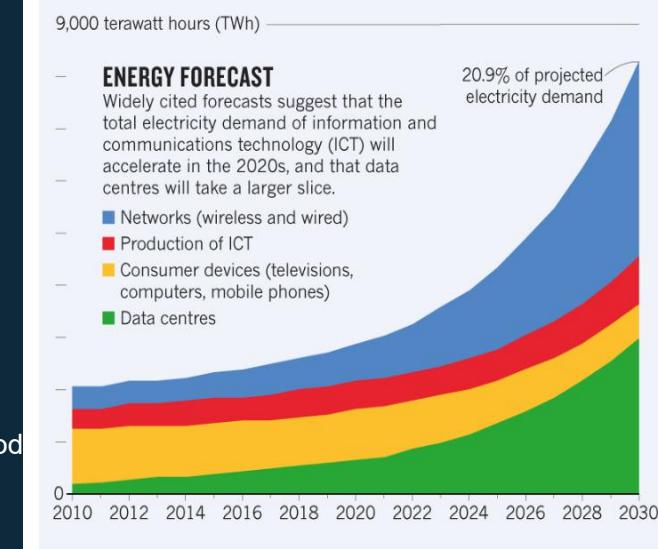
Some analysts fear widespread adoption of the metaverse may result in a significant rise in emissions.

Even as Metaverse reduces carbon emissions through a reduction in travel, its dependence on virtual reality (VR) technologies and data centres will have a negative impact on the environment. Data centres use AI to track eye and hand movements, while VR depends on cloud services. A huge amount of power is required to run such facilities, which comes at a great environmental cost.

According to research conducted by the University of Massachusetts, training a single AI model could emit about 626,000 pounds of carbon dioxide, which is almost five times the lifetime emission of an average car,

Another research conducted by Lancaster University showed that if 30 percent of gamers moved to cloud gaming platforms by 2030, it would lead to the rise of carbon emissions by 30 percent.

There have been several innovations over the past year that will help data centers to become more sustainable, and there will surely be more in the future. Since sustainable energy sources are also set to become more mainstream, the future environmental impact of the metaverse will be lesser than it is today.





SAFETY OF TRANSACTIONS

A cryptocurrency is a medium of exchange that is digital, encrypted and decentralized. Unlike the U.S. Dollar or the Euro, there is no central authority that manages and maintains the value of a cryptocurrency. Instead, these tasks are broadly distributed among a cryptocurrency's users via the internet.



Transactions will happen through cryptocurrency. Cryptocurrency received its name because it uses encryption to verify transactions. This means advanced coding is involved in storing and transmitting cryptocurrency data between wallets and to public ledgers. The aim of encryption is to provide security and safety. Crypto is built with the power of verifying the authenticity of a virtual good.



IMPORTANCE OF VIRTUAL LIFE

As we will be spending more of our time in the virtual world than in the real world, our virtual clothes and virtual homes are going to matter more than the real ones. We will have the power to design anything as we will not be restricted by lack of raw material as nothing is real. All we will need is imagination and coding skills. People will be able to generate real wealth from this virtual world. We can be anyone and do anything in this virtual world.



Metaverse Allow you To visit other country without Leaving Your Room

- The tourist industry has exploded in the post-pandemic situation. Not only visiting in real life, but people have also started visiting places all around the world using VR headsets. Today, people prefer to visit places using Metaverse technology first before investing in costly air and hotel packages.

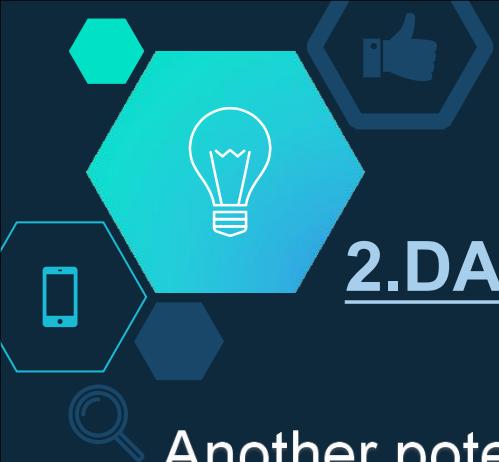


NEGATIVE OF METAVERSE

1.ADDICTION

You know how we already complain that humans spend too much time on the internet playing games, watching movies, doing TikTok videos and even streaming videos? Well, the idea of Metaverse will amplify that by a whole lot.





2. DATA AND SECURITY



Another potential negative of this world is access and sharing of data. I mean, joining the metaverse will require you sharing of huge amount of data with Meta. Which include but not restricted to your behaviours, interest, patterns etc. on a much larger scale.



3. Anxiety & Depression

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