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# Metaverse & its Societal Impacts

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# Agenda

- ▶ Introduction
- ▶ Literature Review
- ▶ Details of Existing Models
- ▶ Applications
- ▶ Gap Analysis
- ▶ Conclusion
- ▶ References

# Introduction : What is the metaverse ?

- ▶ An internet you are not just looking at through a screen but you are actually inside of.
- ▶ It's a combination of multiple elements of technology, including virtual reality, augmented reality and video where users "live" within a digital universe. Supporters of the metaverse envision its users working, playing and staying connected with friends through everything from concerts and conferences to virtual trips around the world.
- ▶ Technologies that make up the metaverse can include virtual reality—characterized by persistent virtual worlds that continue to exist even when you're not playing—as well as augmented reality that combines aspects of the digital and physical worlds.
- ▶ At its core, the metaverse is an evolution of our current Internet.

# Introduction : The economy of metaverse

- ▶ A digital economy : users can create, buy, and sell goods. And, in the more idealistic visions of the metaverse, it's interoperable, allowing you to take virtual items like clothes or cars from one platform to another.
- ▶ Most platforms have virtual identities, avatars, and inventories that are tied to just one platform, but a metaverse might allow you to create a persona that you can take everywhere as easily as you can copy your profile picture from one social network to another.



# Literature Review

- ▶ A total of 10 papers, from established publishers and authors were reviewed.
- ▶ The survey of existing work can be summarised under 3 categories.
  - Effect of metaverse as a form of escapism
  - Metaverse as a beneficial psychological tool for therapy
  - The lack of real feedback and senses in the Metaverse

# Literature Review : Effect of metaverse as a form of escapism

- ▶ Humans are social mammals, we love and need to communicate regularly. Social medias give humans means to express ourselves and receive instantaneous reaction from friends.
- ▶ The emergence of virtuality technology will bring new possibilities for human interaction. Virtual Reality (VR) are predictable to give an enormous impact on daily life.
- ▶ According to a Cisco report VR and AR experience could be involved in peoples day-to-day lives and found that it can be more like an experience where the virtual environment and software applications get into a normal day-to-day routine.
- ▶ In the virtual world, it is only the spatial presences, it can trick the brain to believe in virtual

# Literature Review : Effect of metaverse as a form of escapism

- ▶ Escapism is defined as the act of withdrawing from the problems of the real world into imaginary worlds. In the digital age, the real appears with the virtual.
- ▶ **Good** escapism allows people escape from a narrow world into a broader one, allowing your mind to travel to the place that the body cannot go.
- ▶ **Bad** escapism is when one escapes from the possibility of a broader world into a narrower or safer one, to avoid taking difficult actions & decisions.
- ▶ Notable aspects of unhealthy escapism are
  - Procrastination
  - Psychosis
  - Denial
  - Addiction

# Literature Review : Metaverse as a beneficial psychological tool for therapy

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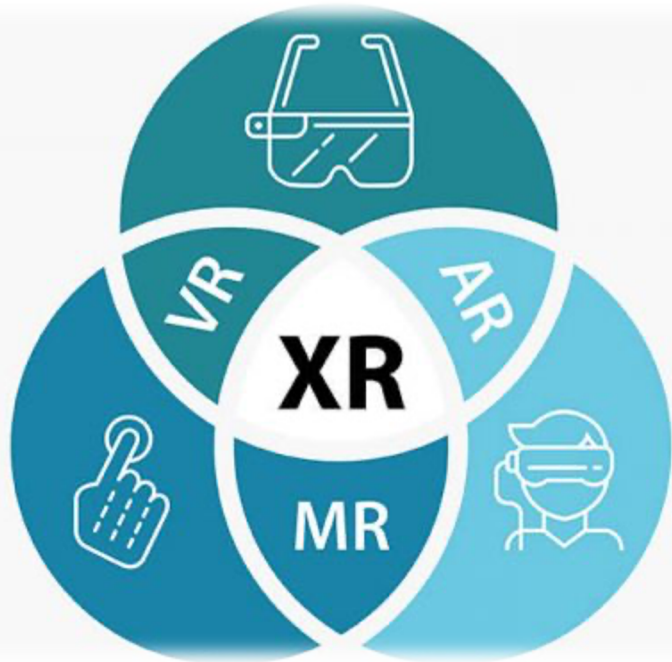
- ▶ Augmented and virtual reality (AR/VR) technologies are regularly used in psychology research to complement psychological interventions and to enable an individual to feel as if they are in an environment other than that of their immediate surroundings.
- ▶ New research directions in personalized mental health virtual reality (VR) therapy are proposed, particularly in the areas of prevention and treatment of stress-related disorders.
- ▶ Personalized estimation of the patient's emotional state is based on appropriate artificial neural network algorithms, which integrate various features of the patient's multimodal response, like autonomic physiology, voice, and facial expressions.



# Literature Review : The lack of real feedback and senses in the Metaverse

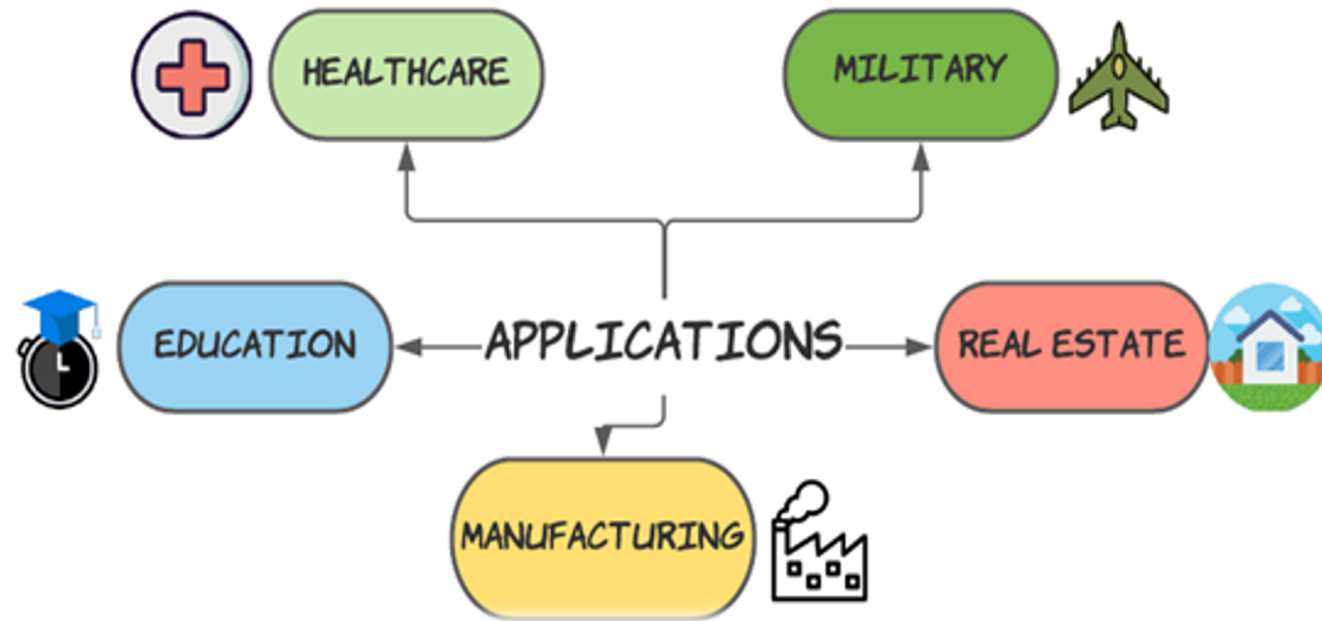
- ▶ One sense that can deepen our experience of many situations is touch.
- ▶ Using haptic devices to deliver the simulation of touch between users via sensors and machine learning for emotion recognition based on data collected help in working towards simulated closeness in communication despite the physical distance or being in VR.

# Details of Existing Models



- ▶ **Extended reality (XR)** is a term referring to all real-and-virtual combined environments and human-machine interactions generated by computer technology and wearables.
- ▶ XR is an emerging umbrella term for all the immersive technologies. The ones we already have today—augmented reality (AR), virtual reality (VR), and mixed reality (MR) plus those that are still to be created.
- ▶ The Metaverse follows the XR model, where all 3 realities merge to form one complete experience.

# Applications



# Applications

- ▶ **Healthcare** : The deployment of augmented reality in the healthcare sector has a substantial value in training and strengthening the skills and knowledge base of future medical professionals. Surgical assistive tools are technology like the Microsoft Hololens that surgeons utilize to help them with and speed surgical procedures.
- ▶ **Military Applications** : Tactical Augmented Reality (TAR) is a technology that appears similar to night-vision goggles (NVG), but it has many more capabilities. It may display a soldier's precise location as well as the positions of ally and hostile forces. The system is attached to the helmet in the same manner that the goggles are, and it may be used at any time of day or night. As a result, TAR effectively substitutes the standard handheld GPS gadget and eyewear.

# Applications

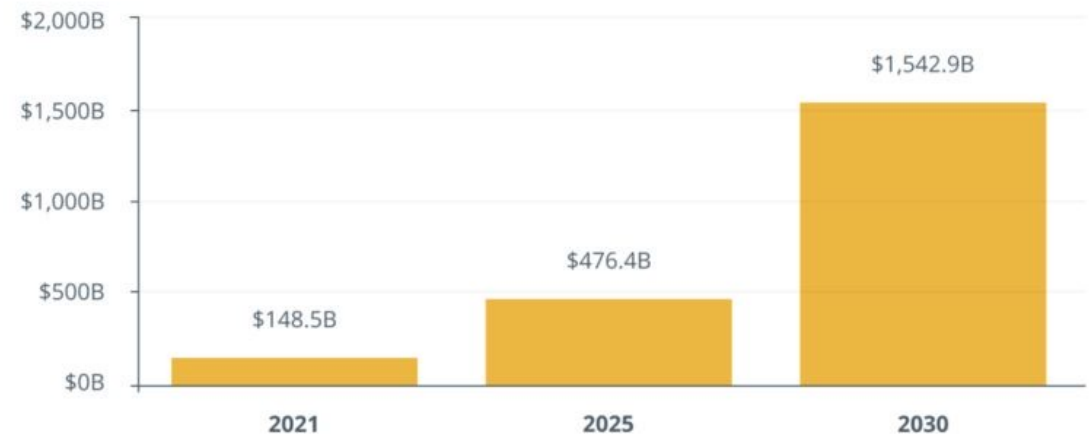
- ▶ **Real estate** : The capacity to give potential clients a realistic and immersive experience is VR's greatest strength. Real estate marketers may take advantage of this power by allowing clients to ultimately see the property before making a choice. Several multimedia features, such as ambient music, narration, and light-and-sound effects, can also be included in specific VR tours.
- ▶ **Education** : Traditional teaching approaches will never attain such a high level of effectiveness in highlighting concepts through visuals. Regardless of their age, students will always choose to sit and watch something rather than read it. Virtual reality technology is fascinating because it can produce incredible experiences that could never be “experienced” in real life. With the usage of this technology, students will be more motivated to learn.



# Gap Analysis

- ▶ The Metaverse is still in its nascent stage but it has a huge scope for growth.
- ▶ Recent surveys and studies have shown Metaverse Market to Witness Promising Growth to Reach a market value of \$1.5 Billion by the year 2030.
- ▶ Developing Metaverse Platforms for Education and entertainment Sector may Open Avenues for the Market.
- ▶ The Metaverse is likely to produce trillions in value as a new computing platform or content medium. In its full version it becomes the gateway to most digital experiences, a key component of all physical ones, and the next great platform.

**Metaverse market size**



# Conclusion

- ▶ Technology sets the direction of modern history and defines it.
- ▶ The Metaverse is still in its nascent stage but it has a huge scope for growth.
- ▶ The Bright Side of the Metaverse is that it will allow people to experience an endless virtual world, where they can do things they only dreamed of using an avatar.
- ▶ The Dark Side of the Metaverse In my perspective, is the separation that will happen between people and reality. It is that perspective in which technology fully catches human attention, distracting us from the real world completely.
- ▶ How Metaverse will impact our lives, depends a lot on us, on how we will use it. Just like with the other innovations some will use the metaverse for good and others, for bad things.

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