International Journal of Scientific Research in Engineering and Management (IJSREM)
Volume: 09 Issue: 03 | March - 2025 SJIF Rating: 8.586 ISSN: 2582-3930

A study on Conceptual framework of AR, VR, & AI Technology

Miss Bhargavi H. Dangar, Student, M.M.Ghodasara Mahila Arts and Commerce Collage Junagadh (Gujarat)

Abstract: This article shows the depth concept in modern technology utilized in various sectors. Main aims for preparing this work is people know and aware about changing era with technology. In this article includes clear vision of AR, VR, & AI. Through immersive digital experiences, interactive environments, simulation, and engagement, augmented reality (AR) and virtual reality (VR) technologies have completely changed the way that people learn. The article highlights the tools, software, steps and advantages of using Augmented Reality (AR) and Virtual Reality (VR) technology. It explains about what skills are needed in a student and what kind of opportunities are available. a concise summary at the beginning of the piece that provides a high-level overview of the key points, research questions, findings, and conclusions of the article, Artificial intelligence is becoming a popular field in computer science as it has enhanced the human life in many areas. Artificial intelligence in the last two decades has greatly improved performance of the manufacturing, service sector and so in the field of education.

Key Words:

The enterprise segment accounted, Education, Retailing:, Healthcare: Gaming

❖ Introduction

Augmented reality (AR) Virtual reality (VR) & Artificial intelligence (AI) are powerful technologies that are transforming entire sectors, making organizations smarter, more efficient, and more competitive. In the process, a whole range of novel legal and commercial issues are emerging with clients demanding the most innovative and well-informed advice to survive and thrive.

Businesses are turning to Pearl Cohen for our unmatched, valuable, and useful advice on protecting their intellectual property rights, addressing their worries about data security and privacy, and legally securing their go-to market initiatives as they embrace and integrate these technologies more and more.

Our work on the backbone of neural networks, enhancing their speed and efficiency, the nexus between AI and big data, new AR and VR technologies that involve near-instantaneous rendering, and the implications of these technologies in fields like art, healthcare, and more are a few examples of our work in these areas.Meaning and terminology of AR VR &AI

What is Augmented Reality?

For creating a fictitious environment, Augmented Reality (AR) is the perfect combination of the real world and the virtual one. Applications that are produced involve. AR technology combines digital elements for a real-world experience in desktop or mobile applications. Since augmented reality is more effective than virtual reality in the gaming industry, almost everyone with a Smartphone will be able to experience its effects. By using a mobile camera or video recorder to show virtual images and characters, augmented reality (AR) turns

the real world into a vibrant visual one. AR is just the user's experience in the actual world.

What is Virtual Reality?

Virtual Reality (VR) is a system-generated simulation of the imaginary world. It is utilized in 3D motion pictures and computer games. A side from games and diversion, Virtual Reality is likewise utilized for preparing, instruction, and science. Virtual reality takes these equivalent parts to one more level by delivering an altogether system-generated recreation of a substitute world. These vivid recreations can make practically any visual or place possible for the player utilizing hardware devices. It assists with making arrangements resembling the real world and "submerges" the watcher utilizing PCs and tangible gadgets like headsets and gloves.

What is Artificial Intelligence?

Artificial Intelligence completely differs from VR and AR, as it does not consider the user's experience of the real world; rather it is merely a technology that is specially designed based on the user experience. AI collects the information and processes it based on the gathered information to enhance the user experience the better way. In simpler words, Artificial Intelligence is about technology structured to solve user issues by gathering user experience by technology on its own.

❖ Objectives

- To Know about brief concept of AR,VR, and AI and its working area
- To aware about uses of AR,VR, and AI.
- To Know about the difference between AR, VR, and AI
- To know the future business market scope

❖ Present Market Scenario of AR VR AND AI IN India

The Indian AR/VR market is currently experiencing significant growth, driven by increasing smartphone penetration, a young tech-savvy population, and government initiatives promoting digital adoption, with key sectors like education, retail, healthcare, and gaming rapidly adopting AR/VR technologies, leading to an expected high CAGR of around 38% in the coming years; while AI integration is also gaining traction, with the government actively supporting its development through initiatives like the National Artificial Intelligence Mission. the entire AR/VR market in India will have grown at a compound annual growth rate (CAGR) of 38.29% to reach US$ 14.07 billion, propelled by rising smart phone adoption and pervasive internet access. 750 million of India's 1.2 billion mobile consumers were smart phone owners as of 2021. Because the majority of young people in Tier 2 and Tier 3 cities are highly computer literate, businesses and app developers are able to offer AR-based experiences. The hardware segment dominated India's AR and VR segment with 71% share as of FY20.

AI has various applications in India, such as healthcare, agriculture, education, transportation, and finance.

The Indian government has launched several initiatives to promote AI development, including the National AI Strategy, the National AI Portal, and the Responsible AI for Social Empowerment (RAISE) initiative. The Indian AI market is currently experiencing rapid growth, with projections indicating a significant expansion in the coming years, driven by factors like a large pool of tech talent, government initiatives promoting AI adoption, and increasing demand across various sectors, particularly healthcare, finance, and retail; the market is expected to reach a value of around $8 billion by 2025, growing at a CAGR of over 40%.

❖ Role of AR &VR in various fields

The enterprise segment accounted: The enterprise segment accounted for 72% of the AR/VR market by 2020; The technology has found applications in the automotive, oil and gas, logistics and healthcare sectors. AR/VR is most widely used in the consumer space in the retail and gaming segments.

AI in enterprise accounting refers to the integration of artificial intelligence technologies into accounting systems to streamline and enhance financial processes within businesses. AI tools

in accounting help automate repetitive tasks such as data entry, invoice processing, and reconciliations.

Education: Adopting technology helps make the learning process interactive and helps students understand concepts better through visual presentation. In India, BYJU'S is one of the best example of ed-tech start-ups offering AR services. According to the report titled 'Augmented and Virtual Reality in Education'.

Artificial intelligence (AI) can help improve the learning experience for students and teachers by personalizing learning, automating tasks, and providing real-time feedback.

Retailing: AR/VR is the future of retail as its adoption across segments helps enhance the customer experience; For example, customers can now try a product before buying it.

Retailers such as Myntra, IKEA and Lenskart offer AR-based services, enabling customers to make informed decisions without even visiting a store.

AI in retail can help improve demand forecasting, inform pricing decisions, optimize product ordering and placement, and track data from online channels to inform e-commerce and digital promotion strategies. AI in retail can also help recognize customer intent and optimize the buying journey accordingly.

Healthcare: AR/VR is widely used in medical education, diagnosis, surgery and fitness. AR- powered diagnostics help contain the spread of the Covid virus and provide support during complex surgical procedures; these are some of the most important benefits of adopting AR/VR in healthcare.

Artificial intelligence (AI) has many roles in healthcare, including improving patient care, reducing human error, and helping with diagnosis and treatment.

Gaming: AR/VR technology has revolutionized the gaming industry worldwide. According to International Data Corporation, AR/VR generated revenue of US$12 billion in 2020, which is projected to grow to US$72.8 billion in 2024. Currently, 80% of revenue is contributed by the gaming industry.

Artificial intelligence (AI) in gaming makes video games more responsive and immersive by creating intelligent non-player characters (NPCs). AI can also help with game development by generating content, analyzing data, and testing for bugs

❖ Difference Table OF AR VR & AI

Augmented Reality	Virtual Reality	Artificial Intelligence
AR is visualizing things in the real world	VR is a virtual world	AI uses algorithms from the user experience.
AR can be retrieved using smart phones	VR requires a headset gadget, however,	AI does not require any gadgets
AR clients can handle their presence in reality	VR clients are constrained by the control system	AI is completely technologies.
AR improves both the virtual and real-world	VR just upgrades an imaginary reality;	AI solves the user's problems.
The user is isolated from the real world while in VR.	The user is aware of the real world while experiencing AR.	Provide personalised recommendations to people, based for example on their previous searches and purchases or other online behaviour.
Examples: PlayStation VR, Samsung Gear VR, and HTC Vive.	Examples: Pokemon GO, Google Maps AR, and IKEA App.	Examples :Manufacturing robots, Self-driving cars, Smart assistants ,Healthcare management

❖ Major benefits of AR VR &AI

Benefits of Augmented Reality (AR)

- Offers individualized learning
- Cultivating the learning system
- Wide assortment of fields

- Offers advancement and constant improvement
- Expanded reality can be utilized to increase client information and data.

Benefits of Virtual Reality (VR)

- Vivid learning
- Establish an intuitive climate
- One of the main benefits of VR is that it assists you with making a reasonable world so the client can investigate the world.
- In the educational industry, Virtual reality comforts it by making it simpler and more agreeable.
- Virtual reality permits clients to try different things with a counterfeit climate.

Benefits of Artificial Intelligence (AI)

- Less human error
- Available all time
- Plays a major role in the repeated task
- Complete digital assistance
- Make quick decisions

❖ Future scope for AR, VR & AI

To stay afloat in the gaming industry, developers need to be aware of these developments. It's not that we've taken over traditional UX—by which I mean route, availability, intelligibility, shade theory, variety, saw execution, etc.—but these concepts are unquestionably not new, and we should start getting to know what customers are looking for right now. The new dominant technologies are wearable, augmented reality, virtual reality, and artificial intelligence; artists must figure out how to outperform them. Additionally, even though the VR and AR dynamics are unlikely to result in a typical user experience, the experiments may provide you some fresh ideas. The industry and regulations have stood the test of time when it comes to artificial intelligence.

❖ Conclusion

The development of wearable technology, immersive devices, and AI processing capabilities has led to significant improvements in AR and VR technology. These advancements have opened up new possibilities in various industries, including healthcare, education, and entertainment the future of AR, VR, and AI is bright, with many exciting developments on the horizon. As these technologies continue to evolve and mature, they will transform the way we live, work, and interact with the world around us.

References:

1) https://www.PresentMarketScenarioofAIin.

2) https://www.PresentMarketScenarioofARVandAI

3) https://www.ibef.org.

4) https://www.geeksforgeeks.org.

5) https://www.coursera.org.

6) https://www.wikipedia.org.