Lesson 1.2: What is Augmented Reality?

Unit 1: Introduction to Smart Expert Solution and the Technologies which Enable it

Module 3: Remote Expert Solution for Vocational Technical Training Programmes

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AUGMENTED REALITY (AR)

What is Augmented Reality Technology?

Augmented Reality (AR) technology is a technology that **overlays digital information onto the real world, creating a hybrid environment where virtual and physical elements coexist**. AR can be experienced through a variety of devices, including smartphones, tablets, smart glasses, and headsets. AR technology has applications in a variety of industries, including gaming, entertainment, retail, education, and healthcare. With continued innovation and development, AR technology has the potential to transform the way we interact with the world around us.

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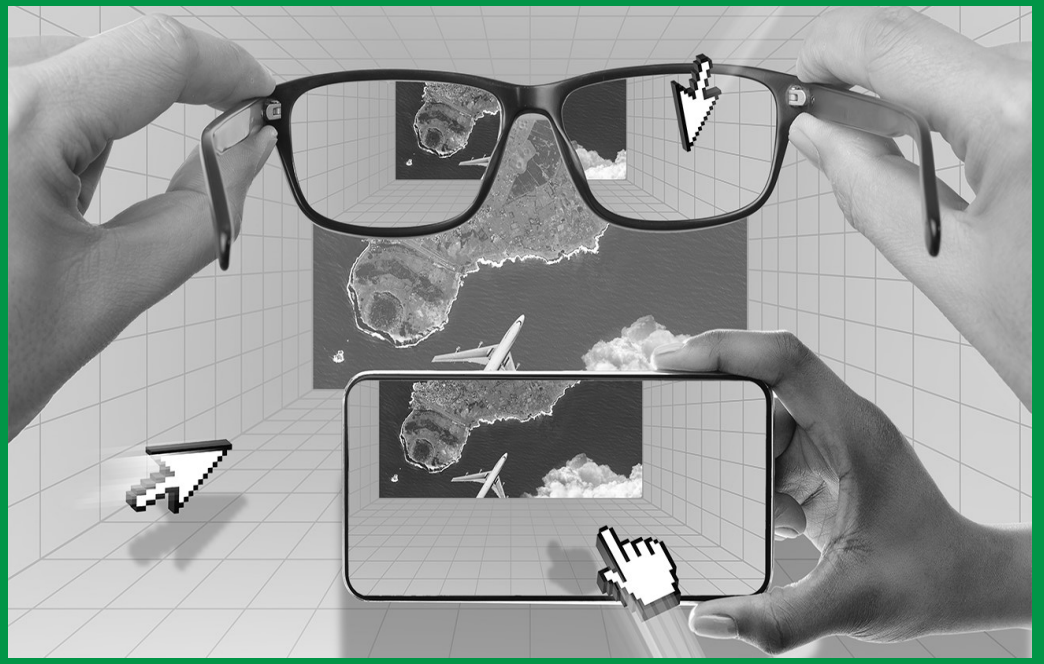
HISTORY OF AR

What is the History of AR?

AR technology has its roots in the early 1960s when Ivan Sutherland developed the first head-mounted display system. Since then, AR technology has undergone significant development, with various forms of AR becoming available to consumers. The evolution of AR technology has led to the creation of products like Google Glass, HoloLens, and Pokémon GO.



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KEY FACTORS THAT LED TO THE GROWTH OF AR

What are the key factors that led to the growth of AR?

Mobile Devices: One reason for this is the rapid advancement of technology, particularly in the area of mobile devices. With the increasing power and capabilities of smartphones and tablets, it's become much easier for developers to create AR experiences that are accessible to a wider audience. The game's popularity gave a major boost to the AR market.

COVID-19: The pandemic has also played a role in the increased interest in AR. With people spending more time at home and looking for new ways to stay entertained, AR has become an appealing option. From virtual museum tours to AR games, there are a wide range of AR experiences that can be enjoyed from the comfort of one's own home.

In addition to that, due to the pandemic, many companies have adopted a remote working module, and AR has provided a way for employees to collaborate and communicate in a more engaging and interactive way.

Immersive & Interactive Experiences: Thereafter, another factor contributing to the rise of AR is the growing interest in immersive and interactive experiences across the globe. This has opened up new opportunities for businesses to engage with customers in a more interactive and engaging way.

APPLICATIONS OF AR

What are the Applications of AR?

AR technology has a wide range of applications, including entertainment, education, medicine, marketing, and manufacturing.

- In the entertainment industry, AR is used in video games, sports broadcasts, and theme park attractions.
- In education, AR is used to create interactive and immersive learning experiences.
- In the medical industry, AR is used for training, surgical planning, and patient education.
- In marketing, AR is used to create engaging and interactive advertisements.
- In manufacturing, AR is used for product design, assembly, and quality control.

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Augmented Reality in Business:

Augmented Reality (AR) is transforming the way businesses operate by offering a new level of interactivity, engagement, and convenience.

- In the business world, AR has numerous applications, including **product visualisation, employee training, marketing campaigns, and customer engagement.**

Augmented Reality in Manufacturing:

Augmented Reality (AR) has several applications in the manufacturing industry too.

- It can be used to guide technicians through maintenance and repair procedures, providing real-time instructions and visual aids.
- AR can also assist in complex assembly procedures, ensuring accuracy and efficiency while aiding in quality control by quickly identifying defects and allowing for immediate adjustments.
- Additionally, AR can be used for immersive training experiences for workers, providing a safe and controlled environment to practice procedures and processes.
- Finally, AR can help designers visualize and test new products in real-world environments, allowing for adjustments before manufacturing begins. As a result, AR has the potential to significantly improve efficiency, productivity, and safety in the manufacturing industry, making it an increasingly popular technology for companies looking to stay competitive.

What is the Difference Between AR and VR?

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GVA

Augmented Reality (AR) and Virtual Reality (VR) are often mentioned together, but they are different technologies. VR technology creates a completely immersive experience, while AR technology enhances the real world with virtual elements. AR technology has the advantage of not requiring a separate physical space, as VR does, which makes it more accessible and versatile.

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Seeing the rapid changes that are happening in the field of technology, most of us have questions about whether we should invest in this field or not. The next section might provide you with clarity regarding this.

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CHALLENGES OF AR

What are the Challenges of AR?

Augmented Reality (AR) technology has seen significant growth and development, there are still several challenges that need to be addressed in order to fully realise its potential. Some of the key challenges of AR include:

- **Technical limitations:** AR technology is still limited by the processing power and battery life of mobile devices, which can impact its performance and usability.
- **User experience:** AR experiences can be difficult to use and navigate, particularly for first-time users. Improving the user experience and making AR more intuitive and user-friendly is a key challenge.

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- **Privacy and security: AR technology has the potential to collect and transmit sensitive information, raising concerns around privacy and security**

- **Content creation:** Creating high-quality AR content can be a complex and time-consuming process, requiring specialised skills and expertise.

- **Standards and Interoperability:** There is a lack of standardisation in the AR industry, which can make it difficult for different AR systems to work together and for content to be shared across platforms.

Overall, while AR holds significant promise, addressing these challenges will be critical to realising its full potential and enabling it to become a more mainstream technology.

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