Realism Insights in the Digital World

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Overview of Realism and Why It's Valuable?

Realism is an art style that focuses on making pieces look as realistic and true-to-life as possible. Realism in games is important because it creates immersive environments for players, adds challenge and complexity, and can be useful for educational or training purposes.

Computer games realism refers to the degree to which a game accurately represents the real world, including its physics, graphics, sounds, and other elements. Realism can vary depending on the game and its intended audience, ranging from highly realistic simulations to stylized representations that are only loosely based on reality. In general, the more realistic a game is, the more immersive it can be for players.

To achieve Realism in the Digital World mostly 3 technologies are used.

A) Augmented Reality (AR)
B) Virtual Reality (VR)
C) Mixed Reality (AR and VR both)

Augmented Reality (AR) and Virtual Reality (VR) technologies are creating an immersive experience that can be used in various fields, from gaming and entertainment to education and healthcare.

In this blog, we will explore the AR and VR technologies with examples.

What is Augmented Reality (AR)?

Augmented reality is like adding a special kind of magic to the *real world* that we can see with our own eyes. AR is a technology that overlays virtual objects onto the real world. AR creates an interactive experience that enhances the user's perception of the world around them.

For example, **an AR app** (example: Google maps) could allow you to point your smartphone at a physical object and see additional information or animations overlaid onto it.

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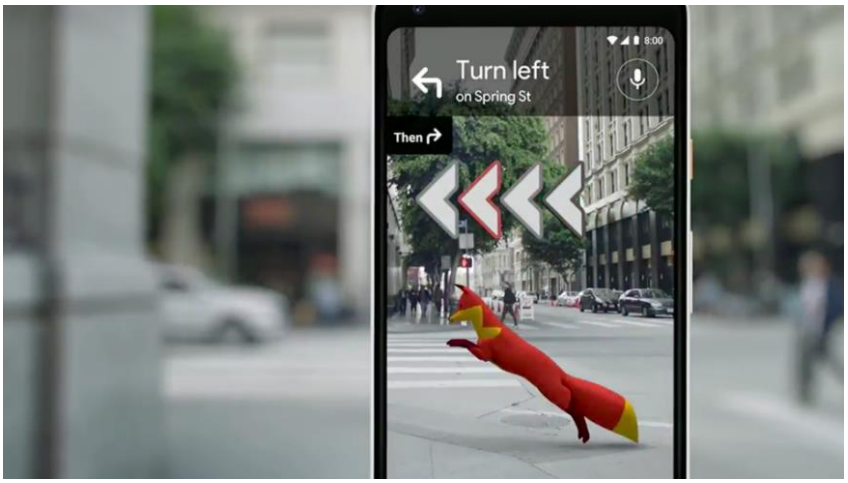
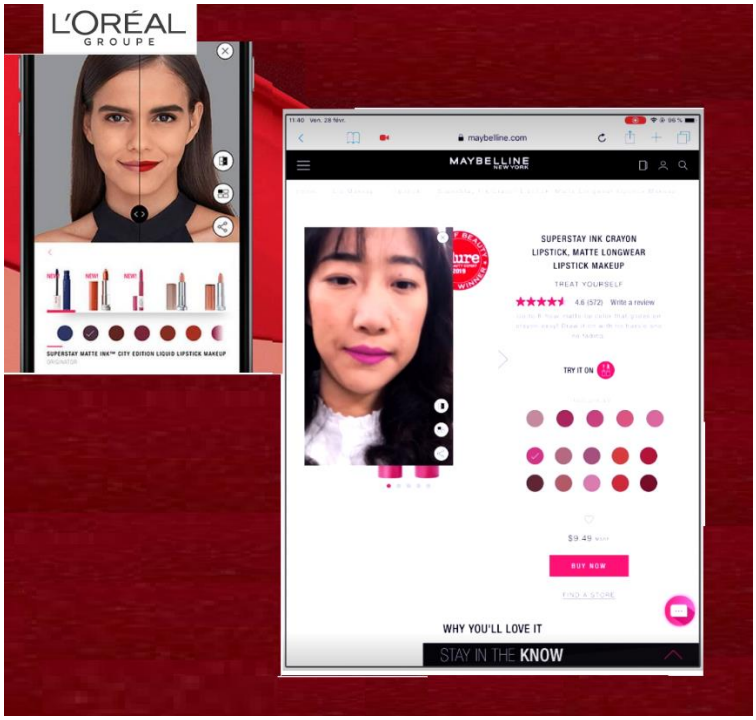


Photo Credit: CASSIDY MILLER/GOOGLE: Google maps augmented fox direction feature.

In **retail**, AR can be used to create virtual try-on experiences, allowing customers to see how clothing or makeup will look on them before making a purchase. AR can also be used to create interactive product demonstrations, allowing customers to see products in action before making a purchase.



In **education**, a science book that uses AR to show you a 3D model of a planet or an animal. By pointing your phone or tablet at a special page in the book, the augmented reality technology brings the image to life and lets you see it from all angles. Also brings the content to life and making it more engaging for students.

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So, in simple terms, augmented reality (AR) is a way to make *digital objects appear in the real world*, giving us a new way to interact with the things around us.

What is Virtual Reality (VR)?

Virtual reality is like stepping into a different world that isn't real, but feels like it is. It's a technology that lets you wear special goggles or a headset that covers your eyes and ears, and makes you feel like you're somewhere else.

VR is a technology that creates a simulated environment that can be experienced through a VR headset. VR completely immerses the user in a *virtual world*, allowing them to interact with objects and characters as if they were real. VR technology can create a sense of presence that makes users feel like they are in the virtual world.

Credit: Wikipedia: Researchers with the European Space Agency in Darmstadt, Germany, equipped with a VR headset and motion controllers, demonstrating how astronauts might use virtual reality in the future to train to extinguish a fire inside a lunar habitat.

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In **education**, a student wearing virtual reality goggles and studying chemistry concepts.

Photo: A child wearing virtual reality goggles

In **computer games and sports**, a person playing table tennis with VR electronic gadgets.

Photo: Table tennis with VR

What is difference between AR and VR?

AR and VR are two related, but distinct technologies used for immersive experiences.

Augmented reality adds intelligence to the *real world* that we can see with our own eyes.

Virtual Reality (VR), on the other hand, is not a real world, it's an *imaginary world* created with artificial intelligence, but feels like it is real.

The main difference between AR and VR is the level of immersion and the type of experience they provide. AR adds a layer of virtual information to the real world, while VR creates a fully simulated environment that can be explored and interacted with.

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Augmented reality vs virtual reality

What is Mixed Augmented and Virtual Reality (MAVR)?

Mixed Augmented and Virtual Reality (MAVR) is a technology that *combines* both virtual reality (VR) and augmented reality (AR) to create an immersive experience for users. In MAVR, virtual objects are superimposed onto the real world, creating a mixed or hybrid reality. This is achieved using advanced sensors, cameras, and computer vision technology that allows virtual objects to be placed in the real world and interact with it in real-time.

MAVR can provide a more realistic and interactive experience for users, as they can interact with virtual objects in a real-world setting. For example, a user wearing an MAVR headset can see and interact with virtual objects that appear to be in the real-world environment they are in. This technology has potential applications in various fields, such as gaming, education, healthcare, and engineering.

A simple example of Mixed Augmented and Virtual Reality (MAVR) could be a user wearing an MAVR headset and interacting with a virtual object placed on a real-world tabletop. As the user looks at the tabletop through the headset, they can see a virtual object, such as a ball or a toy, superimposed on top of the real table. The user can then interact with the virtual object using their hands, which are tracked by sensors in the headset, and move it around on the table.

Photo: Example of mixed reality - Microsoft HoloLens

In this example, the user experiences a mixed reality, where the virtual object is integrated with the real-world environment and interacts with it in real-time. This technology can provide a more immersive and interactive experience for users, allowing them to explore and interact with virtual objects in a real-world setting.

Conclusion

- AR and VR are two exciting technologies based on Artificial Intelligence that are changing the way we interact with the world around us.
- AR overlays virtual objects onto the real world, while VR creates a completely immersive virtual environment.
- Both technologies have various applications in industries such as gaming, education, healthcare, and retail.
- The future of AR and VR is bright, and we can expect to see even more exciting developments in the years to come.