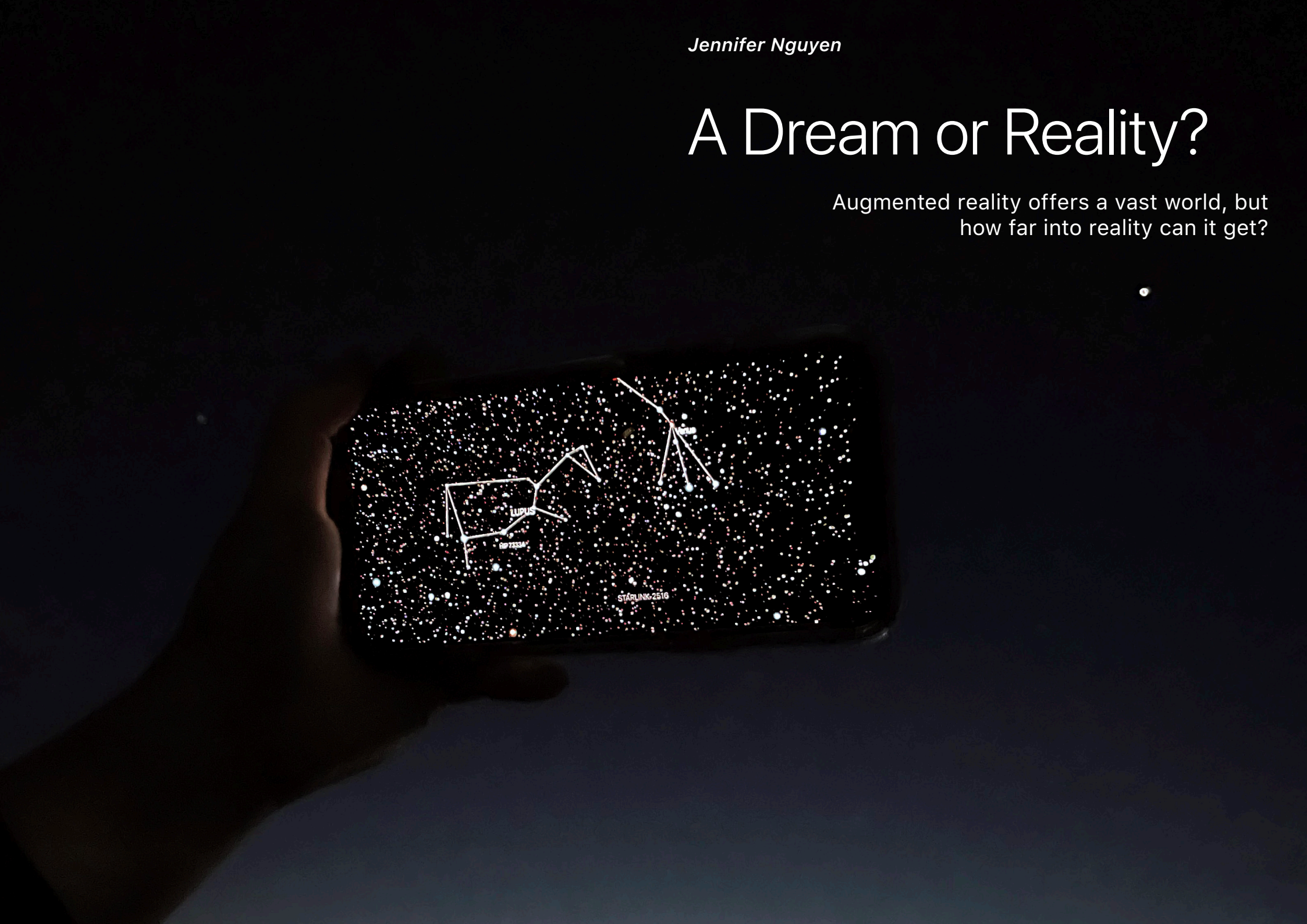
Jennifer Nguyen

A Dream or Reality?

Augmented reality offers a vast world, but how far into reality can it get?



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Have you ever wondered how big or small an animal could be when in front of you? Or want to make heading to your destination easier by using arrows signs placed in the real world? This is all available on your smartphone using the technology of Augmented Reality. AR technology is related to the concept of virtual reality. It is used where 3D virtual objects are integrated into a real-life environment, combining virtual reality with reality. Throughout this article, I will present AR systems' characteristics and how AR can be applied in our society today.

Augmented reality and virtual reality are related to how VR creates an artificial world that can be explored and interacted virtually. AR also presents to us an interactive experience but instead brings these artificial objects into the real world. In this case, computer-generated graphics are mainly worked with and overlaid on natural objects, using the display and tracking technologies that overall create AR.

A **computational platform** is needed to manage and work the virtual material to be placed on top of a real-life environment, process the tracker information, and control the AR display(s).

Next, **displays** are needed to present the virtual object in the physical environment. These displays can be head-worn, mobile handheld displays or displays integrated into the physical world.

Registration is significant, as it aligns the virtual elements with the physical objects they identify.

Wearable input and interaction technologies assist one to navigate the augmented world and further expand the world around them.

To communicate with other people and computers while on the run, **wireless networking** is needed. Flexible mobile AR will rely on the current up to the second information. For example, this would make it possible to report train or bus delays and traffic conditions.

Data storage and access technology are essential as data sources must provide information suited for one's current context. It is significant to get to the most relevant

information while minimising the effort and information overload.

As technology rapidly develops every day, this flexibility creates new possible kinds of applications using augmented reality. Especially with mobile AR, there have been many ways to use AR today. AR presents a wide range of applications in several industries. With the rise of consumer smart devices and technology developments, AR has potential in the mainstream consumer area.

Mobile augmented reality games have been rising in today's society. Top hit games such as "Pokémon Go" creating a realistic approach and requires you to find these Pokémon in a natural environment while using the AR mode on your mobile.

Using AR in education is also implemented as students can benefit from seeing live 3D models through their mobiles, especially in fields such as medicine. Using AR in learning materials such as pages from a textbook is the foremost valuable target for AR.

Many maps now use AR in their live view option for easier management. It does this by displaying signs and logos into the real work through your mobile and showing different directions and locations as you move in a particular direction.

Nowadays, many would use AR when taking photos. Many of these photo apps would use AR to create filters that add a layer of imagery in the foreground or background of your image. Apps such as Snapchat and Instagram use this to add extra virtual aspects to your pictures.

To conclude, augmented reality is everchanging and rapidly growing every day and has become a vital piece of our everyday life. It is an enjoyable yet valuable piece of technology that is easily accessible on one's phone. As we learnt about AR's systems and applications throughout this article, we know it is a rapidly developing technology. We hope to see AR grow into a better tool to support the future of our society.

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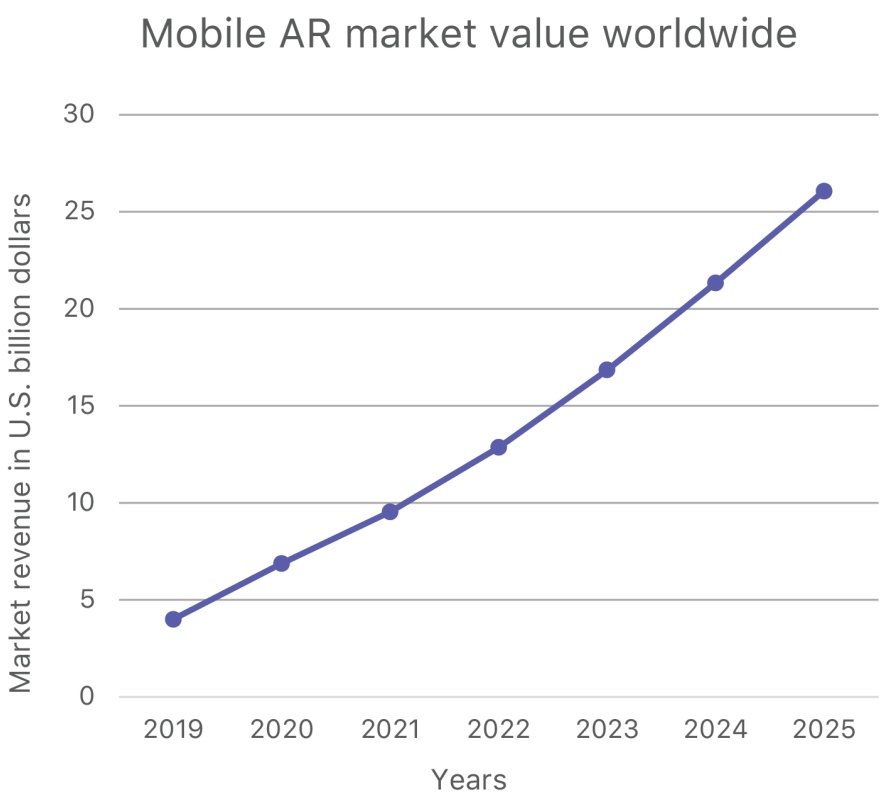
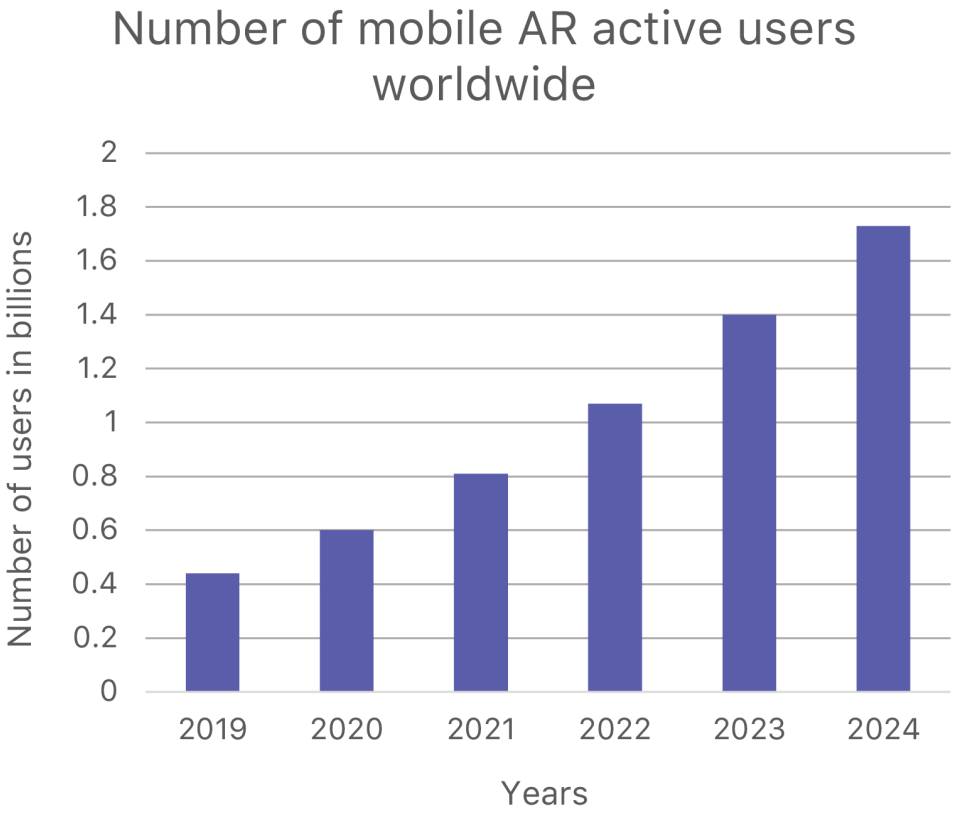

Mobile AR market value worldwide
Market revenue in U.S. billion dollars
30
25
20
15
10
5
0
2019
2020
2021
2022
2023
2024
2025
Years


Number of mobile AR active users worldwide
Number of users in billions
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
2019
2020
2021
2022
2023
2024
Years