

THE FUTURE OF AUGMENTED REALITY

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Augmented reality (AR) at the moment and AR future development possibilities, necessary devices and algorithms of AR software development are discussed in the paper. Modern ways of using AR are also presented. Also, some information about using AR in everyday life is given.

Imagination is an integral part of every person. As children, we all imagined incredible things, such as visiting any place without even leaving our room, or, as far as I know, some people had imaginary friends and they could only visualise them in their mind. What if the line between your imagination and the real world did not exist? With augmented reality, not only is that possible, it is right here [1].

AR is an interactive experience of a real-world environment where the objects that reside in the real world are enhanced by computer-generated perceptual information. As it was mentioned before, augmented reality gives us a lot of opportunities. For example, you can preview any item in your own space, visit any place you want, if you cannot visit them in real life, etc. Even nowadays you can create your dream flat with “IKEA place”; this is an application where you can take all the furniture from “IKEA” and place it in your flat, and order this stuff.

But let us move on to the topic of the article. The future of AR is really promising, with the help of some augmented reality software, engineers can even design cars or buildings. Augmented reality helps engineers work smarter. AR simplifies the process of projecting; engineers no longer need any layouts, and engineers are also deprived of the need for calculations due to the ability to simulate the behaviour of buildings or mechanisms using the computing capabilities of computers.



Figure 1 – Designing a car.

But there are some needs for the intelligent use of AR technologies, for example, software and its development. An augogram is a computer-generated image that is used to create AR. Augography is the science and software practice of creating augograms for AR. Fiducial markers are used in large projects to improve computer vision and positioning of AR models. It is not the same as just putting a table in your room. Fiducial markers are used in exact calculations, for example, in mathematics, fiducial markers can be used to construct a real-world coordinate system.

If you are interested in AR and want to try it yourself, let us talk about hardware. To try this technology, you need just your smartphone that supports AR technology, but if you want to understand the meaning of AR and its role in our lives, you need to purchase a professional HUD (or head-up display), or you can obtain a cheaper device such as AR-glasses. HUD gives you the opportunity to use AR without using any devices, and you will be able to feel yourself right in the place that you have created yourself. You may have already seen some kinds of AR hardware devices in such series as “Black Mirror”. The main characters of some series wear contact lenses, or they have an implant that broadcasts the environment, changed with AR, right in their brains. Unfortunately, such technologies are currently not available in real life, and we can only guess, how long it will take scientists to develop these devices.

The gaming industry has embraced AR technology. A number of games have been developed for prepared indoor environments, such as AR air hockey, “Titans of Space”, collaborative battles against virtual enemies, and AR-enhanced pool table games. Augmented reality has allowed video game players to experience a digital game play in a real-world environment. “Niantic” released the augmented reality mobile game “Pokémon Go”. “Disney” has partnered with Lenovo to create “Star Wars: Jedi Challenges”, an augmented reality game that works with the Lenovo Mirage AR headset, a tracking sensor and a Lightsaber controller. The game has been launched in December 2017.

AR makes it easier to study. AR can be integrated into education systems around the world, facilitating the learning process and making it more interesting for schoolchildren and students of any profession, not only related to IT and engineering. And the most breakthrough achievements of AR are related to medicine. This is called augmented surgery (AS). AS helps surgeons make their work easier and turn complex and dangerous surgeries into a daily routine. In 2020, the first augmented surgery was successfully performed, and at the moment, AS is a common thing not only in the United States. AS is a great example of how augmented reality helps humanity save lives [2].

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All of the examples above are just the tip of an iceberg, and AR will develop into one of the most expensive technologies during the whole history of humanity in the future, according to IT financial analysts, because today it is one of the most promising technologies. The greatest minds of mankind are developing augmented reality technology right now and there is hope for a highly-technological future.

References:

1. Apple – [Electronic resource] – Mode of access: <https://www.apple.com/augmented-reality/> -- Date of Access: 25.03.2022.
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