УДК 681.12

L. Tulchak
I. Klishin

AUGMENTED REALITY AND USING IT IN THE REAL LIFE
Vinnitsa national technical university

Анотація
Представлений метод покращення життя за допомогою доповненої реальності; подані статистичні данні та сфери використання
Ключові слова: *AR, доповнена реальність, IT-технології.*

Abstract
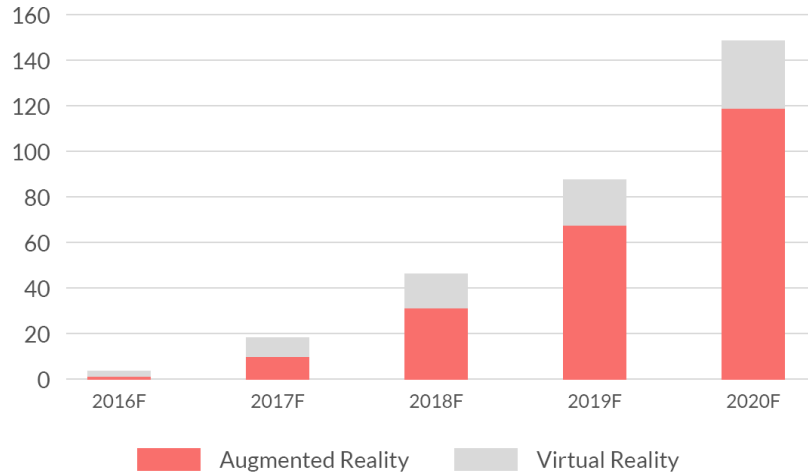*The method for improve our life through Augmented reality, gave statistics and areas of use*
Keywords: *AR, Augmented reality, IT technology.*

Foreword

Augmented reality (AR) is a direct or indirect live view of a physical, real-world environment whose elements are "augmented" by computer-generated perceptual information, ideally across multiple sensory modalities, including visual, auditory, haptic, somatosensory, and olfactory [1]. The overlaid sensory information can be constructive or destructive and is spatial registered with the physical world such that it is perceived as an immersive aspect of the real environment[2]. In this way, Augmented reality alters one's current perception of a real world environment, whereas virtual reality replaces the real world environment with a simulated one. Augmented Reality is related to two largely synonymous terms: mixed reality and computer-mediated reality. The primary value of Augmented reality is that it brings components of the digital world into a person's perception of the real world, and does so not as a simple display of data, but through the integration of immersive sensations that are perceived as natural parts of an environment. Augmented reality is used to enhance the natural environments or situations and offer perceptually enriched experiences. With the help of advanced AR technologiesthe information about the surrounding real world of the user becomes interactive and digitally manipulable. Information about the environment and its objects is overlaid on the real world. This information can be virtual or real, e.g. seeing other real sensed or measured information such as electromagnetic radio waves overlaid in exact alignment with where they actually are in space. Augmented reality also has a lot of potential in gathering and sharing tacit knowledge. Augmentation techniques are typically performed in real time and in semantic context with environmental elements. Immersive perceptual information is sometimes combined with supplemental information like scores over a live video feed of a sporting event. This combines the benefits of augmented reality technology and heads up display technology (HUD).[3]
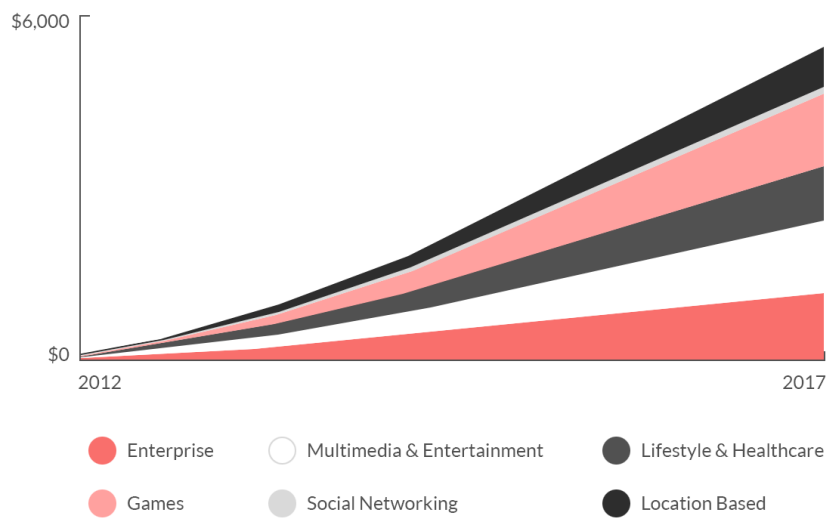
Advantage

Augmented or Virtual: what`s the difference? Both virtual and augmented realities provide the experience through the 3D high definition audio and video, but there is still a weighty difference. The VR is completely immersive and puts a user into isolated reality while the AR is partly immersive. In the world of augmented reality, your user can look around and through artificial objects of the expanded layer.

Augmented/Virtual reality revenue forecast

In AR the computer algorithm uses sensors and markers to spot the current position of physical objects and determine a location of simulated ones. After this technology renders the picture that will appear on the camera.

Total mobile ar revenues ($5.2BN) on mobile devices split by category (2012 to 2017)

Use

Commerce

Developing augmented reality Android application or the one for iOS discovers the new experience both for offline and online shopping. Virtual fitting rooms will help users choose the right size and decreased purchases returns. Same is for choosing new car color or new furniture for your apartment. Also, don`t forget that you can use this technology for promotional campaigns adding AR on supportive materials.

Manufacturing

AR can facilitate and accelerate the building processes at the factory. Project managers can monitor work progress in real time through AR markers on equipment. Besides, it can save a ton of time by using digital maps and plants. Pointing a device into location shows how the piece of a machine will fit the final construction.

Education and training

AR brings truly unlimited possibilities for teaching and learning process. Additional reality provides the unique cognition path with immersive real-life simulations.

Technology gives entirely real psychological and physical experience and helps get authentic virtual experience that can be implemented in real life.

Now medical students can try their first surgeries without injuring patients, and future astronauts can get ready for the next space mission.

Travel and Tourism

GPS mobile apps with AR can show tourist routes and directions to desirable destinations, translate the signs on the street, give information about sightseeing. Adding a layer of additional reality to museums ensure users with new cultural experience[4].

Conclusions

Augmented reality is useful technology that should improve our life. Education will be more visual, shopping in web-stores will be easier. It's will help even more introduce computer technologies in our life.

REFERENCES

1. Schuettel, Patrick (2017). The Concise Fintech Compendium. Fribourg: School of Management Fribourg/Switzerland.
2. *Rosenberg, L.B. (1992). "The Use of Virtual Fixtures As Perceptual Overlays to Enhance Operator Performance in Remote Environments". Technical Report AL-TR-0089, USAF Armstrong Laboratory, Wright-Patterson AFB OH, 1992.*
3. *wikipedia.org/wiki/Augmented_reality*
4. *theappsolutions.com/blog/development/ar-benefits-for-business*

Клішин Іван Вікторович — студент групи СА–16б, факультет комп'ютерних систем та автоматики, Вінницький національний технічний університет, Вінниця, e-mail: vklishinjw@gmail.com

Науковий керівник: ***Тульчак Людмила Володимирівна*** — старший викладач кафедри іноземних мов, Вінницький національний технічний університет, м. Вінниця

Klishin Ivan Victorovihc — Faculty for Computer Systems and Automation, Vinnytsia National Technical University, Vinnytsia, email : vklishinjw@gmail.com

Supervisor: ***Tulchak Liudmyla V.*** — Senior Lecture, Chair of Foreign Languages, Vinnytsia National Technical University, Vinnytsia