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The essence and value of augmented and virtual reality

The article analyzes the significance and value of augmented and virtual reality technologies. The problem of reality and virtuality are considered. The gradual spread of augmented reality technologies is being studied. The functions of the virtual space and the integration of technologies into everyday life are revealed. Technology for augmented reality is being used increasingly often. The technology's adaptive system base makes it useful for both study and entertainment. VR technology is also developing quickly and is connected to AR technology. As a result of technological development and popularization, it became essential to comprehend the value of augmented reality as a reality in general and technology in particular. In augmented or virtual space, the main value is freedom. At the same time, it is a universal value of the information society that occupies the main place in the virtual space. Considering this in more detail, we can identify several important value orientations of free virtual space. This is primarily free access to information. Virtual objects can be used for free, bought, or rented by getting access freely. Freedom of self-expression in the virtual world is also an important value. The augmented space around us can express individuality.

Keywords: augmented reality, philosophy of technology, virtual reality, technology, reality, cloud technologies, augmented being, mobile devices, virtual values, perception of reality.

Introduction

Through the use of digital gadgets, augmented reality allows users the opportunity to interact with virtual items and experience living in both virtual and actual worlds. The way augmented reality technology operates superimposes virtual elements on the user's field of view to "supplement" the way a person typically perceives. Any interactive technology that produces real-time 3D objects from the user's perspective is referred to as augmented reality (AR). Although T. Caudell, an engineer, first used the phrase "augmented reality" in the early 1990s, it was initially thought to have been developed by A. Sutherland in the late 1960s [1].

AR technologies are widely utilized nowadays, evolving gradually and spreading into more and more industries. The proliferation of cell phones has only accelerated technological advancement.

The global digital giants are becoming more and more cognizant of the significance of technology in people's lives, and as a result, many are searching for new ways to draw audiences to their content through the virtualization of reality. Augmented reality may be helpful in this situation since, in addition to being highly effective, it also offers limitless potential in comparison to other technologies. The technology's adaptability makes it possible to employ it in various situations and for a variety of purposes.

The growing interest in augmented reality technology gives rise to the need for its philosophical or rather axiological understanding. Via the sensory sheath, we take in the world, and through the body, we engage with the immediate surroundings. Together, our senses enable us to observe and feel the changes we are through. Our main interface instance is created by the act of having an effect on the environment and being aware of it.

We already handle more inputs at any one time throughout our waking lives, so adding additional interfaces to our lives usually makes us more exhausted. Since visual perception predominates in how people interact, perhaps we should think about how virtual items will develop in the future to rethink what interfaces could be.

The term "augmented reality" refers to the blending of virtual and real worlds via the use of gadgets like cameras, mobile phones (running iOS or Android), tablets, and other electronic devices.

In other words, AR embeds virtual components for users into a physical world using the technological interface of that environment. How we handle our obligations has altered as a result of this resource (and even the ones we assign to machines).

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It may be claimed that these characteristics define augmented reality:

- a fusion between the physical and digital worlds;
- real-time communication with equipment;
- adjusting to the surroundings in which the augmented reality-reproducing gadget is situated;
-interaction with all of the environment's physical capabilities (in three dimensions).

It should be mentioned that augmented reality (AR) and virtual reality (VR) work hand in hand. This is because they are being frequently mistaken with one another and frequently cooperating, although AR and VR are two distinct ideas. Despite having similar names, they are significantly distinct in terms of traits and goals.

In contrast to virtual reality, which constructs a whole new world apart from the existing one, augmented reality integrates digital elements into the real world. Both need the employment of a technical intermediary, yet they provide distinct user experiences.

The "actual" environment is completely replaced by virtual reality material. For instance, this kind of technology enables users to fully immerse themselves in games, situations, and worlds where they may act, explore, and interact with entirely digital stuff.

A unique perspective of the physical environment is offered by augmented reality, which projects information (such as pictures, graphics, symbols, and words) onto the real world.

Pokemon Go serves as a good illustration of this in practice because the game's characters must appear to be a natural part of the world the player is playing in.

The basic objective of augmented reality technology is to integrate the physical and digital worlds. Therefore, to recreate augmented reality, three key elements are required:

1. a physical thing that serves as the foundation for conceptualizing and building a virtual object.
2. the availability of a camera-equipped device, such as a smartphone, to send a picture of an actual thing.
3. the software that interprets the signal sent by the camera.

The program gets the image and mixes it with 3D projections after receiving the real item through the camera. The projections are then added to the image and layered in the real world to reflect the augmented reality outcome to the viewer.

Although the most well-known augmented reality applications are primarily meant for entertainment, such as games involving businesses from various industries (education, medicine, fashion, real estate, etc.), they can also be used, for example, in the creation of one's own projects. Numerous opportunities are presented by augmented reality, which, for instance, might fundamentally alter how marketers approach and engage with their target audiences. As a result, AR enables the customer to engage more effectively with the product, learning more about its features, qualities, and details before making a purchase.

This enables businesses to lower sample costs and lower use cases like returns and exchanges. Additionally, by enabling users to employ adjustable settings to simulate their usage and engagement, the technology gives clients a fresh perspective on a product. In the most basic scenario, a customer looks for shoes on Google Shopping and finds a stylish model, but they want to know how these shoes would appear with their clothing before clicking "purchase".

Many other large, medium and small businesses are already investing in this form of augmented reality, despite the fact that this is an example of one of the biggest IT giants in the world.

Augmented reality, which is already being used in marketing, whether conventional or digital, enhances the bond between the public and the brand, attracts new clients, and helps the public see the business as creative.

Technology alone has the power to surprise and alter reality. The mall's interior was transformed into a location where one could swim with dolphins, own a pet cheetah, or watch dinosaurs roaming around owing to a National Geographic augmented reality software.

It does not take long to uncover real-world applications of augmented reality in our daily lives, and in many cases they already do. Regardless of whether it is for amusement, work optimization, process simplification, etc.

A fantastic illustration of how augmented reality has gained popularity is the use of filters in Instagram applications. The algorithm used by the program determines landmarks in the camera image using data from hundreds of previously taken pictures. He is able to correctly insert the "digital designs" of the filters in this way.

One other illustration is QR codes. During the epidemic, their popularity and value have been increasingly apparent. Black and white squares may carry a lot of information, including a product's origin and technical specifications. The program "translates" the content of the image that the camera takes of a figure. Text, a picture, or a link to a website may be the outcome.

The Google Translate software enables one to translate words and phrases printed on signs using a snapshot captured with a mobile phone camera, as well as automatically recognize languages.

The Google Maps application, like all other Google products, enables one to use augmented reality to acquire navigational instructions on how to complete a certain route and reach the desired location.

The usage of augmented reality by businesses across the world is increasing. This trend has already had a big impact on a number of facets of human existence. It makes consuming information and goods more convenient, quick, and easy.

Experimental

The problems of value comprehension of augmented reality technology lie in the plane of the problems of virtual values and transhumanism. Therefore, the author of the study relies on the axiological method of research. To study the technology itself, a systematic approach is used.

Results and Discussion

Through reason, philosophy extensively investigates virtual and augmented reality.

Does augmented reality actually exist? Future reality could be entirely created by computers. It is vital to methodically take into account the philosophy of virtual reality to ascertain the value foundations of augmented reality. It makes sense, to begin with, comprehension of reality.

Duality exists for Plato. In contrast to what we cannot see—the comprehensible world of ideas, which the philosopher claims to be the real world – reality is what we can see, but it is the world of phenomena and shadows. He proposed the theory that everything around us has an idea, such as an idea of beauty, an idea of love, an idea of a person, or an idea of our sentiments, and that everything we experience via our senses is only a reflection of this idea.

Each of these worlds, in Plato's view, has distinctive qualities, such as:

The temporal and geographical universe of the senses, which is dynamic and prone to deterioration. The realm of concepts According to Plato's ideas, nothing has changed in this universe. He is unchangeable and in an everlasting condition [2].

People have to recall it to access this realm of concepts. The universe of ideas thus includes the virtual world, right? Are we actually living in a computer simulation, or were the creators of The Matrix, correct? Did Neo (The Matrix's main character) choose to leave the cave in order to experience reality?

A comparison between the real and the virtual may be drawn between Plato's dualities and current life. The physical, tactile world that we are all familiar with; and the virtual, world of ideas.

His master, Aristotle believed that reality was one and could not be split. The substance is this reality. There is a matter (an undefined origin) and a shape to every material (which determines what a thing is, what it is). The virtual might be a force or a potency in his metaphysics [3].

On the other hand, Descartes asserts that we ought to question reality. We have many doubts. This skepticism leads to the development of his scientific approach to truth-seeking.

He even goes so far as to describe the "evil genius" who is always attempting to trick us. Descartes discovers the truth in this situation: life as a subject who has questions and is duped is vital. So, if I have any doubts, it is because I exist [4].

The idea of "qualia", or the individualized characteristics of a person's life experience, is intriguing. Qualia are connected to the subjectivity of the brain and our perception. We also see reality in this way.

Philosopher T. Nagel makes a note in his writings ("What it's like to be a bat") that our knowledge of things (objective) does not correspond with living experience, highlighting the significance of qualia.

This divide can be filled by augmented and virtual realities, which provide experiences of things like locations or activities that we now only have access to owing to certain technology. Consider a hypothetical program that enables us to add aesthetic components to our world in addition to gamification.

Virtual reality is Philip Zhai's main focus. He does not find augmented reality or virtual reality to be at all unrealistic. They at least exist technically, therefore they have a reality. Virtual experiences are combined with actual sensory experiences that we gather through our senses [6].

The capacity to see images on our computer is one example. The fact that digital data is present and stored in the computer's memory makes this aspect real.

It is obvious that technological advancement comes before other areas of reflection and social interaction, such as philosophy and morality. They are unable to keep up with the quick-moving technological advances.

According to J.A. Martinez, several scientists have attempted to look at how virtuality affects presence using new digital and virtual technology. Virtual communication is an intriguing illustration. First and foremost, this message suggests that the person has vanished physically [7].

Through the use of virtuality, the subject's first space throughout this communication-his body-disappears. Territorial space, global space, illusions, and simulations come next.

According to Baudrillard, simulation is the process of producing a secret, whose purpose is to repress the buildup of reality and whose foundation is just an illusion, whether personal or collective. According to Baudrillard, crime (or the crime of reality) takes the shape of technological life forms like television, the Internet, cyberspace, and virtual reality, which is the dissolution of illusion as a mechanism of concealment [8].

J.A. Martinez wants to clarify for us how closely related simulation and illusion are to virtuality [7].

In his book, David Chalmers makes the case that things in virtual reality are genuinely real and that things that happen there do not only happen in people's heads. Similar to this, he says that experiencing a virtual reality may be just as worthwhile as experiencing a real one [9].

Although the beings in these types of worlds may resemble fictional figures like Sherlock Holmes or Pegasus, he contends that with AR and VR, the user may interact with them and even exert power over them.

Knowing that the augmented or virtual is real makes it clear that the experience we are having right now is also real.

Because there is no interplay between aims or transcendental freedom in choosing a path, the author argues that fictional works like The Lord of the Rings or other books are the first virtual worlds we are aware of, albeit in a crude and nearly prehistoric form.

Chalmers also argues in favor of the reality of avatars and virtual worlds. To obtain virtual cash in EVE Online, one must really utilize one's own virtual body.

If virtual things are not actually there, then experiencing them is akin to having a hallucination.

If virtual items are real, our impression of them may be deceptive since we only notice things that are not virtual (when in fact they do not exist). For instance, when we view a red cube in virtual reality, it appears to us that the item has real-world characteristics like being red and cubic.

It should be seen from this that a hallucination is the perception of an unreal picture, object, or external stimulation that is taken as genuine. A misleading mental image produced by a false impression of reality as a result of a mistaken interpretation of the information received via the senses is known as an illusion.

Chalmers uses the example of a vehicle mirror to illustrate how to escape perceptual traps: A non-specialist may misinterpret a rear-view mirror: a car is approaching disproportionately, and we will not be able to react because the distance between objects has changed and makes it impossible to read that reality properly. On the other hand, a skilled driver will be aware of how close the car behind us is getting.

We require knowledge of reality and an experiential context that helps us comprehend the reality in which we live to have a true perception of reality.

An experienced VR user may recognize virtual items as virtual after this phase of cognitive orienting. They will not recognize things as being in actual space. Instead, they see things as though they were in a virtual environment. This impression will be accurate.

Thus, it is impossible to limit augmented reality and virtual reality to the same paradigm. Virtual realities may not be as good as physical ones, but it is still possible for them to be true in the long run.

Once the definition of reality in virtuality has been determined, the values that make up this reality may be discovered. An augmented reality existence creates a virtual subject and an augmented reality object. They are the source of the virtual object's and virtual subject's values.

The values of a virtual item are determined by what is relevant for the subject in various virtual scenarios, or what is valued in terms of interaction with the virtual environment. These values are crucial because they enable the subject to easily interact with the virtual space itself. What must exist in the virtual realm to equate the item to value is the basis for the value.

The values of a virtual subject are appropriately represented in the subject; in other words, when the subject interacts with the virtual environment, he or she discloses the range of values that apply to various virtual circumstances, primarily to the information found or to other virtual subjects. The subject reinforces,

develops, or inverts his values when utilizing the virtual environment. This only happens within the specific interaction and is frequently assessed as such, although it varies from the actual.

Virtual values are a set of qualities that are demonstrated by the responses and evaluations that come from the interaction of a virtual subject with a virtual object or a virtual subject in a virtual space. This concept is based on the axiological relationship between the subject – virtual object – virtual subject – subject (subjects). Depending on the type of perception, the degree of information, and the prior experience, this interaction occurs in a pluralistic setting. When people pick certain traits that appear throughout their interactions with the virtual realm, they are expressing virtual values. This indicates that they are evaluating, choosing, and making other decisions.

The primary benefit of augmented or virtual space is freedom. It is a universal value of the information society and, in the virtual world, it has a dominant position. We may highlight a number of significant value orientations of free virtual space by taking a closer look. It is free to get information, to start. Although access to information continues to be a core value, information as a value is currently going through a stage of depreciation. Virtual items are available for free usage, purchase, rental, and open access.

In the virtual world, self-expression freedom is a crucial virtue. Thus, one's surrounding environment may convey one's uniqueness. It is possible to modify one's reality and the user interface.

As it was mentioned before, augmented reality applications are used in businesses. To create a more interactive experience, many businesses use augmented and mixed reality. This is particularly true of those businesses that use AR, as augmented digital content can be created in three dimensions, allowing users to interact in all three planes simultaneously. In addition, by exploring the functions of augmented reality, we can see the pattern of priority of convenience and ideality. Any technology should serve a person, be friendly to use. From this, the next important value of virtual space is derived - convenience. A person can change his reality, but at the level of virtuality, he has even more opportunities. Augmented reality glasses can, for example, provide detailed information about the necessary elements of the environment for generalists such as doctors. Because of these advantages, virtual reality devices should be considered for use in schools and clinics. The most prominent augmented virtual worlds are based on Google Glass, Microsoft HoloLens, Oculus Rift, and Project Morpheus, among others.

Thus, the digital giants of the world are improving and developing virtuality technology, and are focusing on convenience and freedom of use. These goals simultaneously serve as values.

The idealization of technology is not a new value among technologies. The desire to improve technology is the basis of technical evolution. Updates are another value of augmented space. Software must be updated to stay current. The same applies to the virtual space, which is essentially a set of programs. In addition, an update is required for the device itself that reproduces virtuality. Technological development goes on, gradually striving for the highest usability of the device. How does this affect the virtual world? Augmented and virtual reality is constantly changing and developing. The very understanding of sustainable reality here means that images and whole worlds can be updated and become perhaps not what they were in the original, all to achieve the convenience and free use of technology. Thus, different models of virtual reality devices can lead to inequality between users.

It is not necessary to be present in the virtual space; one can try on an avatar. Such anonymity is characteristic of the entire virtual space in general. The value of anonymity is especially pronounced in virtual games. AR and VR games are developing virtual technologies, being highly updated software.

Though augmented reality and virtual reality have many advantages, they also have their drawbacks. Many people think that wearing special goggles will improve their lives - but this is not necessarily true. The user still has to navigate an environment just like in normal vision mode; only then does he see additional information overlaid onto his view. This changes how a person interacts with his surroundings and can make him feel more isolated from others since nobody else sees the same augmented content as this person does. Essentially, augmented and virtual reality can change our daily interactions with technology and also with each other. This can be great if used appropriately, but potentially detrimental if not considered at all stages of development.

Conclusions

In conclusion, it should be mentioned that for a virtual world agent, augmented or virtual reality might be seen as real.

The domination of virtual space in social discourse has a big influence on the information transfer process, which changes the social and cultural systems of society. Digitalization processes carry out social trans-

formation activities, affecting the consciousness and conduct of network users and affecting the entire society. The virtual world creates new cultural models by altering the fundamental beliefs, ways of thinking, and behaviors of society.

Modern cultures are evolving as a result of virtual reality, altering social and familial structures. With the growth of virtual space, the parameters of dialogic engagement are growing. It is now possible to communicate, enjoy the advantages of culture, obtain an education, purchase books and products, and bring in anti-social material. In a digital environment, the freedom of information flow between items has taken the role of the meaningful core of personality values.

For the most part, technology is increasingly influencing our reality. In the case of augmented/virtual reality, this is the inevitable future of a new perception of human reality. The value of technology is self-explanatory – the creation of convenience and opportunity. Values inside augmented reality are by and large close to the values of the real world. First of all, it is freedom, which in turn can cause dependence on technology. Perhaps in the future, we will get some "sub reality" in which our virtual avatar will live as inseparably as in ordinary reality. Also, in this virtual reality, we will bring with us the values of the world that we call reality.

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С.М. Жакин

Толықтырылған және виртуалды шындықтың мәні мен құндылығы

Мақалада кеңейтілген және виртуалды шындық технологияларының маңыздылығы мен құндылығы талданған. Шындық пен виртуалдылық мәселесі қарастырылған. Кеңейтілген шындық технологияларының біртіндеп таралуы зерттелген. Виртуалды кеңістік пен технологияны күнделікті өмірге интеграциялау функциялары ашылған. Толықтырылған / виртуалды шындық технологиялары жиі қолданылады. Технологияның бейімделгіш жүйелік базасы оны оқу үшін де, ойын-сауық үшін де пайдалы етеді. VR технологиясы да тез дамып келеді және AR технологиясымен байланысты. Технологиялық даму және танымал болу нәтижесінде кеңейтілген/виртуалды шындықтың құндылығын тұтастай алғанда шындық, атап айтқанда технология ретінде түсіну қажет болды. Толықтырылған немесе виртуалды кеңістікте басты құндылық — еркіндік. Сонымен қатар, бұл ақпараттық қоғамның әмбебап құндылығы, ол виртуалды кеңістікте басты орын алады. Толығырақ қарастыра отырып, еркін виртуалды кеңістіктің бірнеше маңызды құндылық бағыттарын бөліп көрсетуге болады. Бұл, ең алдымен, ақпаратқа еркін қол жеткізу. Виртуалды нысандарды ақысыз пайдалануға, сатып алуға немесе жалға алуға болады. Виртуалды әлемдегі сөз бостандығы да маңызды құндылық болып табылады. Сонымен, айналаңыздағы кеңейтілген кеңістік даралықты білдіре алады.

Кілт сөздер: кеңейтілген шындық, технология философиясы, виртуалды шындық, технология, шындық, бұлтты технологиялар, кеңейтілген болмыс, мобильді құрылғылар, виртуалды құндылықтар, шындықты қабылдау.

С.М. Жакин

Сущность и ценность дополненной и виртуальной реальности

В статье проанализирована значимость и ценность технологий дополненной и виртуальной реальности. Рассмотрена проблема реальности и виртуальности. Изучено постепенное распространение технологий дополненной реальности. Раскрыты функции виртуального пространства и интеграции технологий в повседневную жизнь. Технологии дополненной/виртуальной реальности используются все чаще. Адаптивная системная база технологии делает ее полезной как для учебы, так и для развлечения. Технология VR также быстро развивается и связана с технологией AR. В результате технологического развития и популяризации стало необходимым осмысление ценности дополненной/виртуальной реальности как реальности, в целом, и технологии, в частности. В дополненном или виртуальном пространстве главной ценностью является свобода. В то же время это общечеловеческая ценность информационного общества, она занимает главное место в виртуальном пространстве. Рассматривая более подробно, можно выделить несколько важных ценностных ориентаций свободного виртуального пространства. Это, в первую очередь, свободный доступ к информации. Виртуальные объекты можно использовать бесплатно, покупать или арендовать, получив свободный доступ. Свобода самовыражения в виртуальном мире также является важной ценностью. Так, дополненное пространство вокруг вас может выражать индивидуальность.

Ключевые слова: дополненная реальность, философия техники, виртуальная реальность, технологии, реальность, облачные технологии, дополненное бытие, мобильные устройства, виртуальные ценности, восприятие реальности.