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Internetabhängigkeit

Das Internet macht alles möglich. Wir können Bücher oder Flugtickets, Gebrauchtwagen oder Lebensmittelbestellen. Die Leute benutzen das Internet für die verschiedenen Ziele.

Die digitalen Medien und Geräte haben hinein breitgemacht. Wir sind von ihnen abhängig geworden.

Jüngere sind schon ganz anders mit und in der digitalen Welt groß geworden. Für diese digital natives ist der Cyberspace zu einer zweiten Lebensumwelt geworden. Deshalb haben sie schon bei einer Stunde ohne Netz das Gefühl, dass sie gar nicht richtig existent sind. Das unterscheidet die digital natives von den sogenannten digital immigrants, die noch in der analogen Welt aufgewachsen sind. Ich, das ist mein Facebook-Account oder mein Avatar bei World of Warcraft dem berühmten Onlinespiel. Das formulieren viele Kinder und Jugendliche auch so.

„Das Internet ist klasse, aber alles andere als harmlos“ sagt Bert te Wildt Medienforscher, Psychiater und Suchexperte, wie lange skeptisch ob Internetabhängigkeit eine Suchterkrankung ist. Jetzt er davon überzeugt.

Die Internetabhängigkeit ist nicht noch in den neuen Katalog psychiatrischer Diagnosen, weil die Geschichte der Internetabhängigkeit noch zu kurz ist im Vergleich zu vielen anderen Erkrankungen. Der Abhängigkeitsbegriff ist stimmig. Wir müssen dieses neuartige Krankheitsbild sehr ernst nehmen. Aber die Psychologen sagt man, dass diese Erscheinung ist. Diese Erscheinung kann man von Alkohol, Drogen oder Glücksspielen unterscheiden. Das begleitet Depressionen, Angsterkrankungen und Aufmerksamkeitsdefizit-Hyperaktivitätsstörung.

Internationale Forschergruppe fand vier Typen von Internetnutzern.

Typ A ist mit hoher Wahrscheinlichkeit internetspielsüchtig. Freunde, Schule, Hobbys und Alltagspflichten werden vernachlässigt, vor allem Onlineanwendungen, meist Rollenspiele, werden intensiv genutzt. Kann Typ A nicht online sein, leidet er an Schlafstörungen und Stress.

Typ B hat häufig stark ausgeprägte soziale Kompetenzen und nutzt sowohl Online- wie auch Offlineangebote, geht etwa zum Sport, trifft sich mit Freunden. Virtuelle und reale Welt ergänzen sich, die Balance klappt.

Zu Typ C gehört eine wichtige adaptive Fähigkeit. Der Ausstieg gelingt Angehörigen dieses Typs, weil sie negative Auswirkungen erlebt haben und meiden wollen.

Typ D erscheint das reale Leben als langweilig, alternative Interessen fehlen. Die Beschäftigung mit dem Internet ist zum komfortablen Zeitfüller geworden. Besonders Typ D zeigt auch ein Versäumnis der Eltern: Sie hätten keine Impulse gesetzt, ihre Kinder hätten keine konstante Domäne oder ein Hobby entwickeln können.

Ohne Computer kann man unser Leben nicht mehr vorstellen. Wir benutzen den Computer im Beruf, finden neue Freunde über das Internet, besichtigen Museen. Die Eltern müssen immer wieder eine Medienabstinenz erzwingen, auch gegen den Sog der digitalen Revolution. Sonst kann sich das Kind in der realen Welt seelisch und körperlich nicht gesund entwickeln. Kinder müssen lernen: Ich bin als Mensch noch existent und handlungsfähig, wenn alle Computer und Netze schweigen.

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Information security

The information security is understood as security of an information system from the casual or deliberate intervention causing damage to owners or users of information. In practice there are three basic aspects of information security:

- availability (an opportunity to receive the required information service for reasonable time);

- integrity (relevance and consistency of information, its security from destruction and unauthorized change);

- confidentiality (protection against unauthorized reading).

Violations of availability, integrity and confidentiality of information can be caused by various dangerous impacts on information computer systems.

Emergence of new information technologies and development of powerful computer systems of storage and information processing have increased the levels of information security and have caused the necessity in that, the efficiency of information security grew together with complexity of data storage architecture. So gradually protection of economic information becomes obligatory: various documents of information security are developed; recommendations about information security are formed; even the Federal Law about information security which considers problems of information security is carried out and also resolves some unique issues of information security.

Thus, the threat of information security has made by means of information security ensuring of one of the obligatory information system characteristics.

Today there is a wide range of storage systems and information processing where in the course of their design the factor of information security of the Russian Federation of confidential information storage is of particular importance. It is possible to carry out such information systems, for example, banking or legal systems of safe document flow and other information systems for which ensuring information security is vital in information systems.

On belief of experts of Kaspersky Lab, the problem of ensuring information security has to be solved systemically. It means that various means of protection (hardware, program, physical, organizational, etc.) have to be applied at the same time and under the centralized management. At the same time components of system have to "know" about existence of each other, interact and provide protection both from external, and from internal threats.

Today there is a big arsenal of methods for ensuring information security:

- means of identification and authentication of users (so-called complex 3A);
- means of enciphering of the information which is stored on computers and transferred on networks;

- firewalls;

- virtual private networks;

- means of the content filtration;

- instruments for integrity contents disks check;

- means of antivirus protection;

- systems of detection of vulnerabilities of networks and analyzers of the network attacks.

Each of the transferred funds can be used as independently, and in integration with others. It does possible creation of information protection systems for the networks of any complexity and a configuration which isn't depending on the used platforms.

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Controversial issues in the pharmaceutical ethics

Ethics is “moral principles that govern a person's behavior or his activity” or “the branch of knowledge that deals with moral principles” [4]. It’s known that every person has to be aware of all ethical aspects of his occupational work or professional activities. Pharmaceutical ethics also set special standards for proper relationship between the pharmaceutical industry, the health care and the public.

The purpose of the report is to determine the major ethical challenges in the pharmaceutical industry and in the practice of pharmaceutics and to consider the pharmaceutical ethics as unity of knowledge and practical skills helping pharmaceutics in their work.

There are some major challenges in pharmaceutical industry, such as:

- Ghostwriting. It means ‘to work as a ghostwriter. This term is defined as a professional writer who is employed to write articles but authors remains anonymous [5]. In medical studies ghostwriting is considered to be an unethical behavior or a form of plagiarism. It means that pharmaceutical companies pay to have research studies written for publication. This publication may show their product in a more positive light than warranted.

- Biased research results. Pharmaceutical companies and medical journals that sponsor research reports only “positive” results. They leave out the negative findings or non-findings results where a new drug or procedure may have proved more harmful than helpful [5].

- Prescription data mining. It is an important marketing tool for pharmaceutical companies. These companies are able to observe and track what doctors prescribe. Drugstores compile databases that show how many and which medications individual physicians prescribe. This information is bought by pharmaceutical companies. It is used by drug reps to target particular doctors in their sales and other marketing efforts.

- Promotional speaking. It means that pharmaceutical companies hire prominent physicians to give promotional talks to other doctors. This method is used with goal of promoting their product.

Moreover, preference for material benefit over professional duty is the main reason of pharmaceutical medicine problems.

Some of the organizations and institutes have developed ethical codes for pharmacists. Ethical codes are documents written to persons. They also help to make right decisions.

There are some fundamental points of ethics codes for pharmacists:

- To encourage to patients to seek as much information as they wish. A patient and their personal medical advisors should be able to discuss treatment options;

- To ensure that information provided to patients and members of the public is appropriate and accurate;

- To ensure all the evidence on which doctors should make their decisions is freely available;

- To report all clinical trial outcomes.

Thus, knowledge of pharmaceutical ethics is the basis of proper relationship between the medicine and the public determining the behavior standards.

We conducted a survey of 519 persons by separating them into 3 groups in accordance with the type of employment: the students of pharmacy department; the pharmacists and the patients. Respondents were also separated into 6 groups according to their age. The study showed the level of knowledge of the students and pharmacists regarding the ethical aspects of the pharmacy profession. Analysis of the results of the study allows us to come to the conclusion that pharmacists have much influence on patients’ choice of medications.

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3D modeling

Three-dimensional graphics is an important part of the life of modern man, covering many fields of human activity. 3D models are used in the film industry (creation of special effects), in the development of video games (creation of objects of the virtual world), in medicine (creation of implants based on three-dimensional images of the patient, taking into account its functional characteristics), in design (visualization of interiors, landscapes, etc.) and many other areas.

The founder of 3D graphics is Ivan Sutherland. In the 1963 he developed the SketchPad app, which you could use to create 3D models [1]. It became the "impetus" for the development of three-dimensional modeling.

3D modeling is the process of creating a three-dimensional model of any object [2]. The process usually involves creating an object mesh and then texturing it.

A model can be created automatically, or manually by a 3D modeler.

3D model can be automatically generated on the basis of photographs, video or using a 3D scanner. This method allows you to create a highly detailed object of a good quality. However, this level of quality significantly slows down rendering and increases load on a computer.

When creating object mesh manually, designers usually use one of four general modeling methods, exactly primitive, polygonal, curve and sculptural.

Primitive modeling is the easiest way of modeling 3D models, that includes the use of geometric figure such as planes, cubes, circles, spheres, cylinders, cones and so on [3].

Polygonal modeling is more advanced method then primitive modeling. Polygon modeling involves manipulating the vertices, edges, and faces of polygons, that make up the model, in a 3D space. It is versatile and can be rendered by a computer quite rapidly. However, it is impossible to create a perfectly smooth curved surface, using the method of polygonal three-dimensional modeling.

Curve modeling is one of the best method for designer to make really curved smooth surfaces in comparison with polygonal modeling techniques, which can only approximate curved surfaces using large number of polygons.

Sculptural modeling is based on the representation of the model in the form of some substance that can push, pull, smooth, grab, pinch or otherwise manipulate as if the sculptor would work with ordinary clay or stone.

After creating an object mesh, typically the next step might be texturing the model, that implies projecting raster or procedural images on a surface of a three-dimensional object according to a UV coordinate map, where each vertex of the object with coordinates X, Y, Z corresponds to the coordinates U, V in the two-dimensional texture space, to the model that will define:

- its color (color map);
- its metallicity (metallic map);
- its reflectivity (roughness map);
- its surface texture, defined through light-play (normal map).

The totality of all maps of the object form the material that is responsible for its properties when rendering.

The prospects of 3D technology are huge. It is worth considering the fact that they are constantly improving and becoming cheaper, opening up new opportunities in various fields of human activity.

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Umweltbonus beim Verkauf

Ein Schwerpunkt der Bundesregierung Deutschlands liegt beim Umweltschutz. Die BRD bekennt sich als modernes Industrieland zu seiner Mitverantwortung für die Lösung globaler Umweltprobleme. Seinen Anteil am globalen Treibhauseffekt will Deutschland reduzieren.

Im Verkehrsbereich wird die Belastung der Umwelt durch die stetige Verschärfung der Abgasgrenzwerte besonders bei Pkw, Lkw und Bussen sowie durch die Einführung des bleifreien Benzins reduziert.

Der Schutz der Umwelt in Deutschland wird besonders berücksichtigt. Das Land hat eine sehr entwickelte ökologische Energie, deren Verwendung vom Staat finanziert wird. Überall kann man viele Windmühlen und Sonnenkollektoren sehen. Der Staat fördert finanziell Menschen, die Umwelt-Energie nutzen.

Der Markt für Elektro – und Hybridautos entwickelt sich auch in Deutschland (z.B. Allein BMW hat mehr als drei Milliarden Euro in der Entwicklung des Elektroautos i3 investiert. Die Kaufprämie für diese Autos kommt ins Rolle. Das Interesse an der Kaufprämie war im September 2017 so groß wie nie. Es gibt die Umweltprämie vieler Hersteller, die den von einem Altwagen auch auf E- Autos mit einer Geldprämie honorieren. Insgesamt haben bis Ende September genau 33.660 Autoverkäufer von der Förderprämie profitiert.

Dauer der Steuerbefreiung verdoppelt. Neue Erleichterungen bei der Kfz-Steuer sollen den Verkauf von Elektroautos ebenfalls voranbringen. Der Bundestag verlängerte rückwirkend zum 1. Januar 2016 die Steuerbefreiung für Kunden von fünf auf zehn Jahre. Diese Regelung gilt für neue wie auch für umgerüstete E-Fahrzeuge. Außerdem sollen Unternehmen durch Steuererleichterungen angeregt werden, ihre Ladeinfrastruktur für Mitarbeiter zu verbessern. Die Steuervorteile sind Teil eines Maßnahmenpakets der Bundesregierung, zu dem neben der Kaufprämie auch ein geplanter Aufbau von 15.000 neuen Strom-Ladestellen im Finanzvolumen von 300 Millionen Euro gehört.

Das sind die wichtigsten Fakten, dass er 4000 Euro beim Kauf eines reinen E-Auto gibt. Wer ein Hybridfahrzeug (Elektro- und Verbrennungsmotor) kauft, der erhält eine als “Umweltbonus” umschriebene Prämie von 3000 Euro. Die Kosten des Förderprogramms von 1,2 Milliarden Euro, das der E-Mobilität zum Durchbruch verhelfen soll, teilen sich Bund und Autohersteller je zur Hälfte. Zu Start der Aktion erhoffte die Bundesregierung den Kauf von “mindestens 300.000 Fahrzeugen“ auszuschieben, die Prämie reicht für 300.000 bis 400.000 Fahrzeuge.

Die Förderung hat eine befristete Laufzeit bis maximal 30. Juni 2019. Sind die geplanten 1,2 Milliarden Euro abgerufen, ist das Programm vorbei. Vermutlich reicht das Geld für 300.000 bis 400.000 E-Autos und Hybride.

In diesem Programm beteiligen sich die deutschen Autobauer wie Volkswagen, Daimler und BMW sind dabei, aber auch viele ausländische Hersteller. So beteiligen sich nach Angaben ihres Branchenverbandes VDIK Citroen, Hyundai, Kia, Mitsubishi, Nissan, Peugeot, Renault, Toyota und Volvo. Einzelne Anbieter wollen sogar auf die Prämien noch einen Zuschlag drauflegen, um E-Auto-Kunden anzulocken.

Der Staat hilft den Autokonzernen, weil die Autoindustrie eine deutsche Schlüsselbranche mit 800.000 Arbeitsplätzen und 370 Milliarden Euro Jahresumsatz ist. Daher unterstützt der Staat die Autobauer, damit sie den Anschluss an Zukunftstechnologien wie E-Mobilität oder autonomes Fahren verpassen.

Umweltschutz ist kein Modetrend. Umwelttechnologiefonds, die in die “richtigen“ Unternehmen investieren, fördern den Markt und leisten damit einen aktiven Beitrag zum Umweltschutz.

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Bitcoin is a currency built with mathematics

Bitcoin is a virtual currency. It exists only in a digital form and it does not have physical notes or coins. It can be used to buy things on the Internet. The reason why people can use bitcoin is that it exists at the international level and is not controlled by any government or company. This can be very useful for many companies. Since they work on the Internet now and trade in different countries. Companies and individuals want to avoid paying transaction fees and taxes when exchanging currency. When using bitcoin, they do not need to pay any of these fees.

Electronic payment between the two parties occurs without intermediaries and it cannot be canceled, there is no mechanism for canceling the confirmed transaction. No one can block the funds (arrest), even temporarily, except for the owner of the private key or the person to whom it became known. But the provided multi-signature technology allows us to attract a third party and implement "reversible transactions". With the help of a special scripting language, it is possible to make other versions of smart contracts, but it is not available, unlike the more recent Blockbin systems.

The drawback of Bitcoin is that there are currently not many traders who will accept it as a currency. Another drawback is that the digital currency is a new technology, and as a result, the price of bitcoins varies considerably. There may be other difficulties, such as hackers stealing bitcoin.

So how does bitcoin work?

Bitcoin makes sure that transactions using bitcoins are safe. Bitcoin using something called cryptography of an elliptical curve to ensure the security of transactions between owners. Cryptography using an elliptical curve is a public key type based on math to guarantee a secure transaction.

Bitcoin turns around with this problem, using something called "blockade". This is the register of all transactions to date, which everyone can see. The block-chain shows when the Bitcoins are created, and when they pass between people.

Bitcoin has a very clever way of making sure that the block is accurate. If you could falsify the block chain, you could steal or duplicate the currency, and bitcoin again will not work, because for this you need an accurate register of all transactions.

The block-chain checks for accuracy by computers that solve huge problems with crunching. Bitcoin relies on thousands of computers around the world to solve complex problems that check transactions and prove that the block chain is accurate. Computing power is not provided for free. The calculations require very powerful computers that cost a lot of money.

Bitcoin should provide an incentive for people to solve these problems with the number crunch, rewarding people with new bitcoins when they solve the problem. This is the only way to create new bitcoin. Running the number of crunch that checks the block chain is called "mining" bitcoins. The computing power needed to develop bitcoins is now so great that individuals usually do not participate, unless they pool their resources.

What solves the bitcoin price?

Any day you can see the cost of bitcoin in British pounds or US dollars. The value of bitcoins is determined by the laws of supply and demand - there is a limited number of bitcoin in circulation, and therefore their price is determined by how popular they are, and how many people want to trade in bitcoins at this time.

One of the most interesting remarks with respect to bitcoins is that they are designed in such a way that fewer new coins will be released in time. From the economic point of view, this creates some very interesting questions about what will happen to the value of bitcoins in the future.

Bitcoin is a mathematical currency

Bitcoin can only function thanks to smart mathematics, which is in the background, allowing it to exist. In fact bitcoin is often called "crypto-currency", because its existence depends on cryptography - the division of mathematics related to the storage of information.

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Working With Disabled Children As One of the Tasks of Social Pedagogy

Today, a social pedagogue completes a lot of tasks. Working with disabled children in rehabilitation institutions is considered to be the most relevant one. This is due to the fact that the number of children with diseases which do not let them do some physical activities has greatly increased in recent years.

Let us turn to the definition of the term ‘disability’. Here we mean different kinds of deviation – either mental or physical – that lead to impossibility of doing some activities and changes the natural course of personality development, so that a person is unable to live a full life. [1]

A huge contribution to the development of the principles of practical work with disabled children was made by such scholars as L.S. Vygotsky, N.P. Wiseman, I. Malajczuk and I.S. Rubenstein. Social pedagogues, psychologists and educators are looking for ways and methods for rehabilitation of disabled children. A number of such techniques were described in the works by A.K. Markova, E.Y. Zakharova, V.S. Lutsenko. [2]

There is a number of specialized pre-school and school institutions for children with disabilities in our country. A whole team of specialists work with children on the basis of these institutions. One of them is a social pedagogue. Social pedagogues provide children disabilities with a particular kind of assistance to help them adapt to the environment and society they live in. They also help them obtain professional knowledge and work experience in some spheres of human activity. The work of social pedagogues is conducted by the Federal State Educational Standards of Pre-school and School Education and is aimed at providing a comprehensive care for children with disabilities.

Social pedagogues use various forms and methods of education and training in their work. But as statistics shows, innovative forms of work with disabled children are not often used in rehabilitation institutions. To understand the cause of this problem will lead us to find some ways to provide these establishments with opportunities which would allow them to use progressive techniques. [3]

Children with disabilities are also talented in different spheres, and we must give them a chance to develop their talents. It is important to find an individual approach to every child to help him cope with the difficulties and problems caused by the disease. So it is necessary to develop effective ways of working with such children that would help them to feel comfortable in the society.

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Multimedia technologies

Multimedia technologies are inextricably linked with virtually all spheres of human life. Training, entertainment, business - everywhere they are used quite widely. Without them, our world would be completely different.

Also an integral part of all modern multimedia systems is interactivity, that is, the ability to interact with the user.

Multimedia technologies are one of the most promising and popular areas of computer science. They aim to create a product that contains "collections of images, texts and data accompanied by sound, video, animation and other visual effects (Simulation), including an interactive interface and other management mechanisms." This definition was formulated in 1988 by the largest European Commission dealing with the problems of introducing and using new technologies.

Multicomponent multimedia environment is divided into three groups: 1) audioriod, 2) video series, 3) textual information.

1) Audiorade can include speech, music, special effects (noise, thunder, creak, etc.), combined with the designation WAVE (wave). The main problem with the use of this group of multisolid is the information capacity. To record one minute of WAVE sound of the highest quality, memory is required of the order of 10 MB. To solve this problem, methods of compression of audio information are used.

Another direction is the use of MIDI (Musical Instrument Digitale Interface) in the multispeed. In this case, the sounds of musical instruments (one-voice and many-voiced music, right up to the orchestra), sound effects are synthesized by software-controlled electronic synthesizers. Correction and digital recording of MIDI sounds is performed using music editors (sequencer software). The main advantage of MIDI is the small amount of required memory - 1 minute of MIDI sound takes an average of 10 Kbytes.

2) The video collection is characterized by a large number of elements compared to the audiist. Highlight static and dynamic video sequences.

The static video sequence includes bitmap and vector graphics (drawings, symbols in graphical mode, 3D models) and photographs (photographs and scanned images).

Graphical information is usually associated with large amounts of memory, so data compression technologies are used, which are methods of storing the same amount of information using fewer bits. This optimization is especially important when publishing graphical information on the Internet. The schedule needs to be pre-optimized in order to reduce its volume and as a consequence of traffic.

Dynamic video is a sequence of static elements (frames). There are three typical groups: the usual "live" video sequence of photos (about 24 frames per second); quasi-video sparse photo sequence (6-12 frames per second); animation is a sequence of framed images.

When working with a digital video signal, it becomes necessary to process and store very large amounts of information. The amount of video information can be significantly reduced without noticeable degradation of the image by MPEG compression.

3) Text is often an element of the organization of a multimedia product, starting with memorable headlines and ending with various comments and articles accompanying the presentation. Various methods and tools have been developed for converting text documents between different forms of storage, taking into account the document structure, text processor codes, links, tables of contents, hyperlinks, etc., that are present in the source document. It is possible to work with scanned texts, use optical character recognition in text format.

It is customary to divide multimedia technologies into linear and non-linear technologies. The former exist independently of the user. For example, it could be a movie in a movie theater or a laser show. Non-linear adjust to the person and respond to his requests and commands. An example of such technologies is an interactive presentation or computer game.

Areas of application of multimedia technologies are quite extensive and constantly increasing:

1. Business. Thanks to computerization, it is possible to carry out online monitoring in real time for production processes, movement of corporate transport and always remain in touch with employees. In addition, multimedia devices are widely used for demonstration of goods at sales outlets, while the client can take an active part in choosing the right category. Such systems have found application in the banking, tourism and automotive sectors. Especially the offer of virtual tours to various important places is developing.

2. Education. Presentations and lectures in online mode are widely used in higher schools around the world. And software labs allow not only to save money on expensive equipment, but also to enable students to better understand the material. Plus - qualitative and unbiased evaluation in a test form. Receiving information in various forms of perception increases learning and memorizing by at least a quarter.

3. Linguistics. It is multimedia that allows you to manage services with gestures, voice and even eye movement. And individual programs-translators can immediately reproduce the text in any of the languages, so that artificial pronunciation will be almost imperceptible.

4. Multimedia media technologies. Today every newspaper or magazine has its own Internet version, which is open for viewing wherever there is access to the Web. And accessibility created the opportunity to share news with everyone who has a desire. Globalization and hyper connection allow in a few seconds to learn about events that occurred in any part of the world, both on a large regional scale and personal.

Of course, the entertainment industry occupies a significant part of the use of multimedia technologies. The most progressive development is the creation of virtual realities. In the last quarter of a century, computer games have evolved from two-dimensional arcades into full-fledged life-substitutes. Glasses and gloves allow not only to see and hear, but also to feel non-existent objects.

Almost all novelties of the film industry are created in 3D format, and in each city centers are opened, where in virtual reality one can immerse oneself by one hundred percent thanks to a combination of three-dimensional video, sound, smell and kinetic sensations indistinguishable from the real ones. Thus, multimedia technologies are widely included in the life of a person, simplifying life.

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Holograms: yesterday, today, tomorrow

Holograms have a wide range of possible applications. Already today, they are actively used in various areas of our lives. My research will help to assess the prospects of technology in the future.

The purpose of my work is to identify the strengths and weaknesses of holograms, as well as their demand in the coming years in various areas of our lives.

Hologram is a technology of creating a three-dimensional image using a laser. Holography makes it possible to project a full 3D model in real time.

The first idea of creating holograms appeared in 1948. It was proposed by physicist Dennis Gabor. Then it was not possible to implement it because of poorly developed technologies. Today, things have changed. The idea of holograms is not only comprehensively developed, but also actively applied in practice, improved. The technology is involved in the field of:

- communication;
- educations;
- cultures;
- modelings;
- advertising and marketing.

There are many examples of holograms being used today. In 2017, Verizon and Korea Telecom organized the first international holographic call. As part of the HoloLens project, Microsoft has already created multifunctional virtual reality glasses. In 2017, the first holographic advertising objects and Museum exhibits appeared.

Despite the great progress in the field of holography, the technology is not perfect. For example, international calls require a 5G connection, which is only available in some countries of the world. The equipment is bulky and requires constant and long-term setup. The list of major issues also has a high cost, making the product inaccessible to most people.

However, in the near future holograms will surely become a part of every person's life. They will make portable devices and various computers is a compact and multifunctional. With the help of a special projector in the apartment it will be possible to create a beach, cultural object or any other place on the planet. Moreover, in full size. Popular social networks and messengers will provide users with the opportunity to exchange messages, make video calls and perform other operations using hologram technology. The technology will find its application in medicine. With the help of holograms is quite realistic to conduct accurate and rapid diagnosis. The use of technology in construction will reduce risks and increase the reliability and durability of structures.

In the course of my research, I found out that holograms are a global project with great chances of success. Many of these disadvantages, thanks to the creative approach of scientists from different countries, will soon be eliminated. The development of technologies will help to create compact, functional, inexpensive devices. To someone they will help to realize dreams in reality, to others-to open new horizons, the third will simply make life easier and more convenient.

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The main professions in which mathematics is used

Each of the people, at home and at work, has to make certain calculations, sometimes simple, and sometimes difficult. In one case, a calculator is sufficient for calculations, in another - a special computer technology is needed. Sometimes these calculations require only simple mathematical operations, and sometimes complex formulas of algorithmic and trigonometric calculations are needed.

In addition, some calculations require the possession of methods of geometric measurements, understand information that is presented in the form of tables, diagrams and graphs, schemes of algorithms for performing various tasks. Even the ancients noticed that mathematics makes a person think constantly. And in support of this, the first "Russian University" M.V. Lomonosov said that mathematics should be taught because it brings the thoughts of a person into order.

Mathematics is called "the queen of all sciences", because the mathematical style of thinking and methods of thinking are applied not only in physics, technical and astronomical sciences, it is applied and, it would seem, in sciences as far from it as biology, chemistry, in economics, as well as in meteorology and archeology.

Therefore, it is difficult to overestimate the application of mathematics in the professions that are associated with the above and many other sciences, one way or another, using the "queen of all sciences."

Mathematics in the profession of an accountant.

When suddenly asked the question, in which professions need mathematics, the first thing that comes to mind is, of course, the profession of an accountant. Here, as they say, you need to be good mathematicians. From their mathematical abilities in some cases depends the fate of large companies and firms. Why should an accountant make a mistake in calculating tax deductions or charging employees? In the first case, it is penalties from the tax authorities, or even a criminal case from the prosecutor's office, and in the second - scandal and loss of reputation of the organization.

Mathematics in the technical professions.

This is the area closest to mathematics. Engineers combine in their activity the theoretical and empirical experience, developed over the years. Having a clear mind and scientific basis, they create ever new elements of our modernity, ranging from universal household devices to space vehicles. On their shoulders calculation, planning and erection of buildings, roads, bridges and so on.

An engineer is a too common name for a profession. Connected with mathematics directly, engineers were divided into many specialties of narrow directions. All projects prior to practical implementation are endless calculations and calculations performed using special formulas describing certain characteristics of materials under separate conditions. All of them are again painted in the form of mathematical expressions.

Mathematics in the profession of an architect.

The main task of the architect is to control the construction works as completely as possible. He also creates a plan for erection and makes adjustments to it in the course of the action, depending on the needs. All the documentation that is under construction includes mathematical calculations that describe not only the desired result, but also the characteristics of the materials used.

Mathematics in the profession of weather forecasters.

Listing professions related to mathematics, it is worth mentioning weather forecasters. Weather forecasters are people who are similar in their activities to meteorologists, the only ones that are engaged in the study of natural processes and a more superficial primary analysis, while the main responsibility of weather forecasters is the compilation of forecasts.

Studying the profession with mathematics, it should be noted that it is not enough to be a brilliant theoretician. We need to develop strategic skills, that is, the ability to think a few steps ahead. In other words, it looks like a game of chess, only with the elements, and, depending on the region, the principle of "game" is changing. Well, what game can be more mathematical than chess?

Mathematics in the profession of analyst.

Mathematics in professions related to analytics is necessary and important and in all its diversity. These people work with information. Their duties include: the correct and prompt collection of current data; processing taking into account the current situation; the forecast of events that can occur.

The second point relies entirely on mathematical calculations. In the course of mathematical analysis there exists and actively develops such an area as mathematics in economics. It allows you to collect effective portfolios of shares, relying on the laws of mathematical statistics. Specialists of this industry are now at the peak of popularity, they are valued and awaited in companies that conduct financial transactions, insurance companies, banks and other organizations.

Mathematics in the profession of a teacher.

The main role played by mathematics in the profession of the teacher is to love this science and instill this love to its students. We will not talk about the role of mathematics in absolutely all school disciplines where a solution of examples or problems is required.

Even at singing lessons, studying or reproducing one or another musical intonation or chord, everything is done by counting the bars in order to create a harmonious, symphonic sound.

All these specialties are inextricably linked with mathematics, but in general one can say that our whole life is connected with this science. Just the above categories of people profound knowledge of mathematics makes it possible to deal with their favorite business. But, without knowing mathematics in general, we could not normally live in the modern world. The account is needed both to the seller in the store, and to the office manager, and to the turner, though to a lesser extent than the engineer or scientist. Without knowledge of the elementary foundations of mathematics, we can hardly be full members of society.

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Uses of Gold

Gold is the undisputed leader in the precious metals market. From time immemorial gold was considered the most attractive metal in view of its beauty and brightness. Gold is an ancient metal of wealth, trade and beauty, but it also has a number of unique properties that make it invaluable to the industry. These properties include: resistance to corrosion, electrical conductivity, ductility, infrared (thermal) reflections and thermal conductivity. Due to these properties, gold is used in almost all spheres of human activity. Here are different uses for gold in the modern world.

When most people picture gold, they envision a sparkling necklace or diamond embedded engagement ring. In fact, most of the world's gold consumption is used in the production of jewellery. The assortment of jewelry made of gold is quite extensive, made of metal rings, earrings, chains, cufflinks, fingers and other items. Jewelers make their masterpieces not of pure gold, but of its alloys. This is explained by the fact that pure metal is very soft and does not possess the necessary strength in relation to mechanical influences.

Gold is the most popular metal in which to invest. It is considered a reliable insurance against political and economic crises. Many countries have world reserves. The total reserves of all countries are 30 thousand tons.

Gold is also frequently used in manufacturing. The value of the yellow metal for industrial production is due to its special properties: ductility and ductility. Due to these qualities, a micron wire or an ultra-thin sheet of foil can be made from the raw material.

Not many people know this but gold can be found in the electronics of every single mobile device in the world. Research carried out by the World Gold Council, discovered that a single phone can contain up to 50 milligrams of gold. This may not seem like a lot but when you consider the number of mobile phone's there are in the world, it all adds up to a pretty impressive amount of gold.

In addition to mobile phones, gold is also frequently used in other electronic devices such as laptops and computers. It is one of the best natural conductors of electricity which is why it is often found in computer chips, allowing your computer to pass on and receive information more easily. Whilst not as conductive a metal as silver, gold is more frequently used in electronics due to the fact it doesn't ever tarnish or rust.

Gold because of its good malleability and the ability not to oxidize is widely used in dentistry in ancient times. For dentures and crowns, it takes, as for jewelry, not pure gold, but its alloys. The result is a product with good ductility, excellent corrosion resistance and high mechanical properties - all that is required for dental prosthetics.

Radioactive gold used in oncology for the diagnosis and treatment of malignant tumors, gold threads in aesthetic cosmetology, gold-containing skin care products that, thanks to the antimicrobial action of the metal, contribute to the elimination of skin problems and their rejuvenation.

However amazing it may be, gold is used in food and drink. The intake of gold in food, even with silver, is absolutely harmless. The material is hypoallergenic and does not cause side effects. Gold is included in the European additives. It was first added to food in the US then fashion came to Europe and Russia. Also, precious metal as a decoration of food is used in China and India.

Of all the minerals mined from the Earth, none is more useful than gold. Its usefulness is derived from a diversity of special properties. Gold conducts electricity, does not tarnish, is very easy to work, can be drawn into wire, can be hammered into thin sheets, alloys with many other metals, can be melted and cast into highly detailed shapes, has a wonderful color and a brilliant luster. Gold is a memorable metal that occupies a special place in the human mind.

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Urban environment conception “Smart city”

In the age of rapid development of information technologies, the phrase "smart city" is heard more often. "Smart City" is a concept for the development of the urban environment, which integrates information and communication technologies and the possibilities of the Internet of things. Nowadays, the world leaders in the "smart city's" strategy are the state-city Singapore and South-Korean Songdo. "Digital Economy" program was approved in the Russian Federation on the 31 of July 2017. The Development of "smart cities` technology" is one of the global goals of this program, Moscow and Sochi are selected as pilot cities.

"Smart City" is more than a mass of buildings and services - it is a self-learning and developing intellect, which is directed to improve the quality and safety of life. The variety of detectors, sensors, electronic displays, mobile applications, digital cameras, online services collect, store and transfer data to automated control centers. Modern engineering ideas give an opportunity for the municipal apparatus to work together with the townspeople, collect data and make a right decision.

We can select some key functional areas of “smart city”:

1. Public safety is an area which includes technologies for rapid collection, analysis and transfer data with the aim of instant response to law offenses. In addition to the safety of public order, this includes transport and information security.

2. The key task of healthcare's area is to interact between patient and doctor 24 hours per week. Monitoring the patient's health round the clock allows react immediately in cases where indicators show out a threat to life and health.

3. The main aim of energy resources' area is to rationalize use of energy resources (water, gas, heat, electricity). Every citizen has an opportunity to manage them independently through a "request-receipt" system in depending on their needs. Such system leads to economic savings, because resources are involved only when they are demanded.

4. "Smart city's" transport is based on an intelligent transport system, which is based on the integration of information and navigation technologies in a single platform. Passenger is the key element in this system, who receives information about public transport by any accessible way (mobile application, touchscreen electronic display at a stop). The purpose of automated control center is to redistribute urban and public transport flows with the help of collecting information from mobile devices about traffic jams, large congestion of passengers at stops, and poor-quality road surface (accelerometer functions). Electronic road signs change their image depending on the situation on the roads.

Undoubtedly, “smart cities” is our future. Implementation and realization projects of this concept requires significant financial investments into the technical equipment, organization systems for collecting and storing large data streams, development of cyber security and anti-vandalism systems.

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Electrical Conductivity of Metals

There are several definitions to the term of conductivity. Conductivity is the ability of a body or environment to conduct electrical current. It is also defined of a property of the body or environment that determines the appearance of electric current under the influence of an electric field. It also means the measure unit of this ability and opposite to the electrical resistance.

The classical theory of metal conductivity originated in the early twentieth century. It was developed by the German physicist Carl Rikke. He stated in the experiment that the passage of the charge through the metal is not associated with the transfer of the conductor atoms of the conductor, in contrast to liquid electrolytes. However, this discovery did not explain what carries electrical impulses in the metal structure.

The nature of the electrical conductivity of metals can be explained by the fact that the electric current is caused by external influences on the metal when the electrons start moving in a particular order. Without any external influence, the metal is unable to produce electric charges. But as soon as an external source of influence is connected, electrons arrange in a structured sequence and possess the electric current. With the temperature increasing, the conductivity of metals decreases.

Electron theory of metal conductivity was developed in the works by Paul Drude. He was able to open such a property as resistance that occurs when electric current passes through a conductor. This fact allowed to classify different substances according to the level of conductivity. The results showed which metal would be suitable for the manufacture of different kinds of cables. This is very important as an improper material may cause fire due to overheating from excessive current flow voltage.

Silver has the highest conductivity. But silver wirings are very expensive to manufacture; that is why it is rarely used for this purpose. The metal with the highest electrical conductivity among all the elements of base group is copper. It is one of the most common conductors used for domestic and industrial purposes. It withstands constant electrical loads and is characterized by durability and reliability. Its high melting point allows the wire to operate for a long time in a heated state.

One more metal with high electrical conductivity is aluminum. It is used in low-voltage systems as it has almost twice lower melting temperature than copper and is unable to withstand increased loads.