**МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ**
**СУМСЬКИЙ ДЕРЖАВНИЙ УНІВЕРСИТЕТ**
**ФАКУЛЬТЕТ ІНОЗЕМНОЇ ФІЛОЛОГІЇ**
**ТА СОЦІАЛЬНИХ КОМУНІКАЦІЙ**



# СОЦІАЛЬНО-ГУМАНІТАРНІ АСПЕКТИ РОЗВИТКУ СУЧАСНОГО СУСПІЛЬСТВА

МАТЕРІАЛИ ВСЕУКРАЇНСЬКОЇ НАУКОВОЇ КОНФЕРЕНЦІЇ ВИКЛАДАЧІВ, АСПІРАНТІВ, СПІВРОБІТНИКІВ ТА СТУДЕНТІВ

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The next one can be SolidWorks Professional. The majority of experts will be satisfied with the assembly tools of this package. It will help solve almost any problem.

SolidWorks Premium is the best variant. There is everything for surface and solid modeling.

Photoworks is application for photorealistic rendering that allows creators to assign materials for parts, colour them as a person likes, put a camera and light. Photoworks permits to get a pretty photorealistic images, which subsequently can be shown to the customer.

Construction in SolidWorks is not limited to the development of three-dimensional parts. The utility is often used to automatically create drawings on a given three-dimensional model. This program eliminates designer's errors, appearing as a result of manual work. SolidWorks supports a variety of draft standards. They are ANSI, GOST, ISO, JIS, DIN, GB, and BSI.

Three-dimensional modeling has more benefits than a linear design. SolidWorks software allows to see the future product from different angles and gives it a realistic look in accordance with the chosen material.

## AUGMENTED REALITY IS THE NEXT STEP
## OF INFORMATION TECHNOLOGIES

Лук'янихін О.В., *студ.гр. ПМ-41,*
*(Сумський державний університет)*
I.A.Bashlak-*English advisor*
(*Sumy State University*)

Every day something changes. It's integral part of the modern world. They say: "He who owns the information owns the world". And everybody knows it is really so. Its influence on mankind's development is amazing.. Every new stage of development follows the breakthrough in methods of storing and transferring information. The invention of writing and printing press gave rise to scientific progress and technological revolution. They contributed improving and spreading education and eradication of illiteracy. It is equally important that each of these breakthrough are connected with fundamental changes in society. In fact press, telegraph and telephone essentially changed relationships between people. Nowadays mobile communication and Internet are spreaded all over the world. Though 40 years ago they were only a science fiction. Their appearance was powerful as an earthquake. You can't imagine your routine

life without using all of this devises and technologies. At the moment we are on the threshold of the next information leap. Things that yesterday were only in your imagination, today are becoming part of everyday life. So what is the next step of mankind? Scientists all over the world already have got the answer. Augmented reality is coming.

The first question is what it actually is? In 1994 continuum of "mixed reality" was described by Paul Milgram and Fumio Kishino (Milgram's Reality-Virtuality Continuum). It is the space between reality and virtuality. Between them are the augmented reality (closer to reality) and augmented virtuality (closer to virtual). Forbes says us: "The term Augmented Reality is typically defined as an enhanced version of reality created by the use of technology to overlay digital information on an image of something being viewed through a device."[1] When people think about augmented reality, they imagine Robert Downey Jr. constructing iron man suit by waving his hands in the air or some other examples from sci-fi movies. But in fact it's something that will happen during our lifetime. Thus people should be aware of it.

This technology already exists. As many others it was developed for military purpose. Helmets with a prototype augmented reality were produced for the pilots. At the built-in display pilot saw the data about rate, direction and fuel balance. Now they are highly improved and become a part of infantry's equipment. But augmented reality does not live inside secret laboratories anymore. For instance in modern laparoscopic surgery endoscope image is complemented by the image obtained during intraoperative angiography. This allows the surgeon to know exactly where the tumor is located within the body, and thus minimize the loss of a healthy organ tissue of the patient during surgery.

Furthermore augmented reality technologies are conquering entertainment sphere at the moment. Reuters predicts:" Global Augmented Reality market forecast by product for gaming, automotive, medical, advertisement, defense, e-learning & GPS applications - expected to grow to $5,155.92 million by 2016" [2]. Using technology in entertainment is a first step to recognition and widespread usage. And it has already started.

AR is going to become an integral part of your everyday life. Actually there are many ways to use it in different spheres: education, retail, e-commerce, travelling, architecture, art, engineering etc. For example AR technologies provide possibility to try on goods during your shopping through the Internet. Your new blazer or jeans will always fit without no real life fittings. That's really incredible. And it's only one facet of this technology. One more example of using AR are applications in

different languages for tourists. They help to orientate in cities with week touristic infrastructure and no understandable pointers. In short it means you can forget about getting lost in foreign countries. Millions of applications exist, tens of millions projects are developing right now.

A natural question arises why AR isn't everywhere? Limited possibilities of computing technic were main reason. It prevented spreading of this technology for a long time. But that time has passed. We have already invented things like Google Glass or Microsoft HoloLens. They are not perfect and have several drawbacks as all first steps are expected to have ones. But no doubts the foundation for progress was laid.

Augmented reality is coming. It definitely will change your way of life as smartphones did. The choices we make, and the challenges we face are up to us. Our world will never be the same but we make our best creating its future.

1. http://www.forbes.com/sites/alanmcglade/2015/02/08/augmented-reality-without-the-glasses/
2. http://www.reuters.com/article/2011/12/07/idUS95324+07-Dec-2011+BW20111207

## INTERNAL MODEL CONTROL

S. I. Kakherskyi *ETm-51*
*(Sumy State University),*
I. A. Morozova – *E L Adviser*
*(Sumy State University)*

Synthesis of automatic control system aims to do the calculation, which is the ultimate goal of finding a rational system structure and establish the optimal values of the parameters of its individual parts.

In energy automatic control system is used to restore normal operation after emergency situations or for maintaining certain defined parameters of the system.

Automatic Control Systems (ACS) in its composition require regulators. The main problem in setting the ACS is the choice of parameters of regulators, and the impact of these parameters on quality control. Today there are many methods for selecting these parameters (methods of Ziegler-Nichols, lambda setting)

To select the parameters of the regulator the method of internal model was used. For the study was selected PI regulator that requires two parameters for its configuration. The main feature of the method of internal