Program of the Annual English Language Conference 2016

(Department of Applied Mathematics, Mechanics and IT)

Thursday, 12.05.2016 - time: 09.50 a.m., room 312

1. **Veronika Tatarintseva: "Smart physical training in virtual reality"**

The presentation is about the new technology, which will help not only athletes, but also physical rehabilitation patients learn movement exercises and correct their mistakes. Participating research groups on this large-scale project come from a wide range of disciplinary backgrounds, including biology, psychology, sports science, linguistics, and computer science.

English language consultant: Elena I. Grushko

2. **Vladimir Osmanyan: "Intel Parallel Studio, efficient universal solution for our needs"**

Parallelization of code is distribution of workload among processor cores. As all PCs nowadays are multicore ones, this process can accelerate the performance of a computer system by 4 – 8 times. It may come useful in such fields of human activity as science, space travel, medicine, gaming technologies, etc. Thus, Intel Parallel Studio is a simple and efficient solution, currently applicable in many spheres.

English language consultant: Olga N. Chernoshtan

3. **Ekaterina Khaustova: "Privacy in the age of smartphones"**

We use our electronic devices to communicate, surf the Internet, make purchases, manage bank accounts, take photos and so on. Smartphones can tell a lot of information about us. What can we do to protect our private life? What rights do we have?

English language consultant: Elena I. Grushko

4. **Oleg Klimenko: "Brain Computer interface at the disposal of those in need"**

Brain computer interface (BCI) is a direct communication pathway between the brain and an external device giving a lot of various abilities to a person. So with the help of this technology people suffering from paralysis can write a book or control their prosthetic limb. Besides BCI technology will make life of common people easier. For example, a person will be able to control household equipment using only brain neuron signals. Thus, this technology is useful both for disabled and common people.

English language consultant: Olga N. Chernoshtan

5. **Angelina Senchukova: ""Big Brother is watching you or a short story about the anonymity on the Internet"**

In today's world everything is connected: traffic lights, trains, surveillance cameras, smartphones… Our life is World Wide Web. We are a huge data base. We constantly send to the Internet the details of our lives, but don't think about our privacy and security. The cruel reality is our information is virtually public and it is under threat from companies and governments...

English language consultant: Elena I. Grushko

6. **Yury Fyodorov: " Let's make a neural network!"**

Neural networks are considered to be the one of the most interesting fields of Algebra and Computer Science. These networks are based on operations on vectors, so they are easy to understand. They have been studied for nearly sixty years. This mathematical model can predict changes, so it can be used in economics and meteorology.

English language consultant: Elena I. Grushko

7. Viktoria Parastatova: “A glimpse into AI art ”

Artificial intelligence (AI) is the intelligence exhibited by machines or software. In fine art, especially painting, humans have mastered the skill to create unique visual experiences through composing a complex interplay between the content and style of an image. Thus far the algorithmic basis of this process is unknown and there exists no artificial system with similar capabilities. However, there has appeared an artificial system based on a Deep Neural Network that creates artistic images of high perceptual quality. The system uses neural representations to separate and recombine content and style of arbitrary images, providing a neural algorithm for the creation of artistic images.

English language consultant: Olga N. Chernoshtan

8. Vitaly Galaychuk: “Formula of everything - Tupper's self-referential formula "

Plotting a function (or formula) can help us understand many things. We can clearly see when it rises, when it falls, determine maximum and minimum and so on so forth. But what can we tell about the formula, whose plot depicts the formula itself?

English language consultant: Elena I. Grushko

9. Nikita Kovalev: “ Space: discovered yet unknown "

It is believed that space is a black massive abyss and partly this is true. Exploring deeper we can’t deny this abyss is full of surprises. There is a big list of wonderful things such as supernovae, neutron stars, quasars, redshift. The purpose of the presentation is to shed some light on these phenomena.

English language consultant: Elena I. Grushko