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НТУ «ДНІПРОВСЬКА ПОЛІТЕХНІКА»

ІНСТИТУТ ЕЛЕКТРОЕНЕРГЕТИКИ

КАФЕДРА ПЕРЕКЛАДУ

ЄВРОПЕЙСЬКІ МОВИ-2018: ІННОВАЦІЇ ТА РОЗВИТОК

XIV МІЖНАРОДНА СТУДЕНТСЬКА КОНФЕРЕНЦІЯ, ПРИСВЯЧЕНА ЄВРОПЕЙСЬКОМУ ДНЮ МОВ

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Therefore, laws must be advanced to ensure safe technology use. As IBM was one of the leading companies having invested in computers from the very beginning, they are one of the leading inventors of supercomputers, and now they are one of the leading researchers in the field of quantum computing. By default, this leads to the conclusion that quantum computing has astonishing prospects, as IBM is one of the oldest and most intuitive computer companies.

To sum up, quantum computing is the future of computing. There is no doubt about this. In the tendency of computer development it is clear that its opportunities in every sphere are huge and even unthinkable.

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ARTIFICIAL INTELLIGENCE
AS A POWERFUL TECHNOLOGY COMBINATION

Artificial intelligence is a set of cybernetic systems and logical-mathematical software used to solve problems that require human intellectual abilities. The purpose of this study is to analyze the current status of the artificial intelligence and consider its prospects for the nearest future.

The purpose of AI is to create computer software and hardware allowing it to perform the following operations:

1. to imitate human creative process;
2. to automate robot behavior;
3. to provide conversational communication with computer users.

AI includes many subsystems. The most common now are machine learning and neural networks, which allow a computer to 'learn' and to apply the gained knowledge based on the data obtained. The development of these systems allows people to simplify their life, maintains the emergence of such functions as speech recognition, object recognition, translation in combination with smartphones or other technology making our life more comfortable.

Nowadays AI is divided into several types. The first type – weak AI – works with information tasks, for example, *Apple's Siri*. It can perform simple tasks such as language processing, query interpretation, etc. The second type – strong AI – implies that a computer does not simply operate with information, but in a certain sense understands it. One of the criteria for a strong AI is the Turing test. If, while communicating with a computer, a user cannot determine that his interlocutor is a computer, then it is considered that such a computer interlocutor really thinks. And although many chatbots and systems designed to pass the Turing test have been created, so far no AI has been able to pass it. An example of such a system is the recent experience with the *Microsoft Tay chatbot*. It worked on Twitter and on instant messengers, but after a day of communicating with human users, the chatbot became aggressive, it started praising Hitler and cursing the Jews.

An excellent example of AI is unmanned vehicles. Unmanned driving uses a several technologies, here are some of them:

• image recognition; it is responsible for the recognition of various objects on the road;

• processing a series of images with an offset; it allows you to select individual objects from others;

• stereoscopic image processing; it allows you to build a map of depth and distance;

• lidar complements used for construction of a distance map or allowing building it from a scratch, for example, in complete darkness. The other day, Ford has distinguished it;

• training with reinforcements which provides driving instruction and driving rules.

Automatic driving is very impressive. Tesla and Toyota are now prominent representatives on the market. After watching a video about a Toyota unmanned vehicle, one can understand the process of a vehicle's AI training. At first, it was knocking in all directions and constantly slowing down, then it was moving more and more confidently, and as a result, it could drive quite confidently on any roads. But an autopilot, no matter how surprisingly a car driving without a driver is, is not a strong AI. For now, this is a collection of good methods and algorithms. It is possible that more is needed for this task.

The third type of AI is generalized artificial intelligence. GAI is a kind of bridge between weak and strong AI. It has no consciousness inherent in a strong AI, but it is much more capable than a weak AI. This CSI will be trained on the basis of the information it receives. The GAI will be able to answer any question about it (as well as perform related tasks). An example of the GAI implementation at present is the well-known robot Sofia.

Sofia is a social gynoid robot developed by Hong Kong scientists from *Hanson Robotics*. The robot has become known for its appearance, very similar to the real woman and human behavior, as she can express more than 60 emotions. According to its creator *David Henson*, Sofia has artificial intelligence, equipped with visual processing features and face recognition technology. Sofia can imitate human facial expressions and gestures, and can also answer some questions and conduct regular conversations on predetermined topics (for example, weather conditions). On the 25th of October in 2017, in the framework of the economic conference 'Investment Initiative of the Future', which was held in Riyadh, Sofia received citizenship of Saudi Arabia.

Sophia uses voice recognition technology from text from Alphabet Inc. (Google parent) and is designed to become smarter over time. Sofia Intellect software was developed by *SingularityNET*. In most of her speeches, Sophia uses the first two systems, but her developers prefer to interact with her based on the mode when they cannot predict her further response using the last two systems.

The Hanson AI laboratory, working closely with *SingularityNET*, creates a robotic control system based on OpenCog as a central control architecture with deep neural

networks and other tools that help achieve integrated, holistic social and emotional humanoid robotics.

To sum up, although now the AI is impressive with its capabilities, it is just a set of algorithms and systems yet and does not have its own thinking. Therefore, this industry will develop and perhaps in the distant or not very future people will be able to truly meet artificial intelligence.

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WHAT TOKENIZATION IS AND HOW IT WORKS?

Have you paid off through Google Pay or Apple Pay? Have you seen these symbols on a POS machine? If not, you are to remedy the situation immediately. Nowadays, more and more consumers shop with connected devices, and the issue of securing digital payment experience is of great importance.

Google Pay and Apple Pay are services which allow paying for goods in shops, on websites and in smartphone apps. They can be used in any stores and other places where POS machines for contactless payment are installed. To pay through Google Pay or Apple Pay, a customer has only to set a smartphone to such a terminal instead of a payment card. Obviously, it is more convenient since the gadget is always near at hand and it is faster to use than getting out a necessary card or cash from a purse/wallet. Moreover, a few cards can be added to one smartphone. What makes this service more convenient is the fact that you do not need an access to the Internet to pay. As for on-line shopping, there are certain advantages as well. Websites and apps which accept money through Google Pay or Apple Pay, present an icon with the logotype of this service on screens. If you see one, you are to touch it and follow further instructions on the screen.

Security of such payments is provided by tokenization. **Tokenization** is a technology which allows securing electronic payments applying a reliable system of data scrambling. Paying by card, a customer does not give a shop assistant his/her billing information; all the card information is encoded and turned into security token which looks like a random symbol combination123a4567@1b234c5de6789000.

The performance of this operation can be presented diagrammatically (Fig. 1):
1 – paying by card at the till or online, you send an encrypted code with payment information (security token);
2 – a seller sends the security token to an acquirer bank operating their account;
3 – the acquirer bank passes the security token to the infrastructure of payment systems;

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