

УДК 316.772.5

## THE PHILOSOPHICAL GROUNDS OF THE PROBLEM OF RECOGNITION AND UNDERSTANDING OF THE TEXT BY ARTIFICIAL SYSTEMS\*

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The philosophical grounds of the problem of recognition and understanding of the text by artificial systems are discussed in the article. Author suggests that creation systems that can recognize texts and understand our speech by man is possible and rightfully. However, author believes that the human should be careful with heuristic abilities in such system, because any system that can make decision without human is dangerous potentially.

*Key words:* artificial intelligence; text recognition, optical character recognition.

«The book seems to us as a “wheel of knowledge and imagination”. It cannot be stopped by any technological revolution». That was proclaimed by philosopher U. Eco and script writer J. Carriere in their work «N’esperez pas vous debarrasser des livres» [1]. Why is it impossible to get rid of the books even now, when we use e-books? Is it possible that the system will understand texts as good as we can? Can the system do it better than we? These questions are really important for the future of mankind.

### **The introduction to the artificial systems and technologies of the text recognition**

Cybernetics is the science about the information transfer in different systems. There is a technology of the text recognition in the context of this science. Such a technology is implemented thanks to the artificial intelligence. This trend appeared in 1956 in the USA at the Stanford University [5].

Artificial intelligence is not only about robotics and gaming system. It is also about the creation of the technologies of the text recognition.

However, the recognition of the text does not mean its understanding. For example, let’s examine Japanese poem hokku:

Where is it? The wind that is painted cherry petals.

It disappeared traceless. They say: the earth is covered with snow.

There is still something, you can admire!

Naturally, computer will recognize this text but it will not understand it. It must understand Japanese culture and philosophical implication. It must read between the lines in other words. It means that the understanding is impossible.

However, some troubles can arise during the semantic interpretation. For example, «The wind that is painted cherry petals». Such a metaphor will

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\* Научно-исследовательская работа выполнена в рамках реализации ФЦП «Научные и научно-педагогические кадры инновационной России на 2009–2013 годы», Соглашение № 14.В37.21.0510, проект «Развитие теоретико-методологических исследований по философии языкового сознания» Работа представлена в качестве материала на XV Международную научно-практическую конференцию студентов, аспирантов и молодых ученых «Человек в мире. Мир в человеке: актуальные проблемы философии, психологии, социологии и политологии» (Пермь, Пермский государственный национальный исследовательский университет, 29–30 ноября 2012 года).

not be understood by the computer because the wind is actually colorless. Moreover, it cannot be traceless. Thus computer will not understand metaphorical lines. To make such an understanding possible, we have to create the system that has a large knowledge base and abilities to semantic interpretation and syntactic analysis, i.e. heuristic abilities.

The first attempt to create such system was in 1929 in Germany. It was Gustav Tauschek's machine [3]. Now there are many optical character recognition programs. The most well-known are «ABBY FineReader» and «CuneiForm». These are standard programs that are available for all PC users. They are written standard programming languages, like C or C++. However, we will examine more complicated systems that can understand human speech and even generate the answer. For example, such robots like ASIMO or KATE.

### **How can we make it possible?**

If we want to create the system that can apprehend, process and use the information that is transferred in the human speech, we have to create the system that has all the cognitive markers that all the humans have. Everyone who lives in human society has cognitive base, i.e. the essential knowledge that is characteristic of all the people who live in the same society. For example, the child who was brought up in the European society knows what the television is. However, the child who was brought up in the Maori tribe in New Zealand has never seen a TV. Obviously, this child does not know what the television is.

Everyone has a range of concepts. For example, truth, good or love. There is no exact definition of these ideas. However, these ideas are used by us so often. Talking about other concepts, we have to notice that these concepts are the reflection of our ethnic view and bricks for «the house of the truth of being» building according to M. Heidegger [2]. Concepts are the empirical result of our life activity. Also they have our personal appraisal.

If we want to create the system that can exist in the human society as good as human can, we have to create the huge knowledge base and put as much information as possible into there. Computer can understand us until we will talk only within the framework of its knowledge base. Also we have to

use clearly structured sentences with a perfectly correct grammatical structure. Is it possible in our daily speech? Of course, no. We use expressive means of language, metaphors, similes and epithets. Sometimes these expressive means of language are clear only to us ourselves. Moreover, how can the system understand such ideas like love or friendship? How can the system make moral choice? There will be always the limits of its functioning.

For example, «SHRDLU» was created in 1968–1970 in the US. This system worked with geometric figures [4]. The system could distinguish different geometric figures. All in all, it's functioning was really successful. Another example is PC Friend ECC Eliza. This system is available for download. Friend ECC Eliza simulates psychotherapist. Eliza can ask questions about your problems. However, if you want to talk about something else, something that is not connected with psychotherapy, Eliza will ask you to change the topic of the conversation.

### **Perspectives**

Why do we need the systems that can recognize texts and understand our speech? Certainly, it will optimize our activity and help us. However, there is philosophical problem. Is the creation of such system rightfully? We think that it is rightfully. The development of such systems can really improve our life. Until these systems are limited its subject area, they cannot seize the world and threaten human. We should be careful with heuristic abilities in such system. To our point of view, this area must be restricted. The system that can make decision without human is dangerous. Moreover, there is another side. As much we know about human brain, as easier it is to control and rule over the people.

We still do not know whether it is possible to create the system that is identical to human or not, because we still do not know all the things about us or our consciousness. We all can understand some people; probably it is the highest point of our abilities.

### **Literature**

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ФИЛОСОФСКИЕ ОСНОВАНИЯ ПРОБЛЕМЫ РАСПОЗНАВАНИЯ И  
ПОНИМАНИЯ ТЕКСТА ИСКУССТВЕННЫМИ СИСТЕМАМИ  
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Обсуждаются философские основания проблемы распознавания и понимания текста искусственными системами. Автор утверждает, что создание систем, которые могут распознавать тексты и понимать нашу речь, возможно и оправданно. Однако автор полагает, что человеку следовало бы быть более осторожным в отношении эвристических способностей таких систем, поскольку любая система, которая может принимать решения без человека, потенциально опасна.

*Ключевые слова:* искусственный интеллект; распознавание текста; оптическое распознавание символов.