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SOME ASPECTS ABOUT THE PROSPECTS OF THE UKRAINIAN ARTIFICIAL INTELLIGENCE STRATEGY

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Annotation. The urgency and importance of the Ukrainian Artificial Intelligence Strategy creation is confirmed by the need to ensure the competitiveness of the national economy, security and defense of the state, the implementation of the latest research and technology development. This document clearly defines the directions of breakthrough technologies that can be implemented in Ukraine.

Keywords: Breakthrough technologies, strategy, artificial intelligence.

ДЕЯКІ АСПЕКТИ ЩОДО ПЕРСПЕКТИВ «НАЦІОНАЛЬНОЇ СТРАТЕГІЇ РОЗВИТКУ ШТУЧНОГО ІНТЕЛЕКТУ В УКРАЇНІ»

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Анотація. Актуальність і важливість створення стратегії розвитку штучного інтелекту для України підтверджується необхідністю забезпечення у перспективі конкурентоздатності національної економіки, безпеки та оборони держави, здійснення новітніх наукових досліджень та розробки технологій. Цей документ дуже чітко визначає напрями проривних технологій, які можна реалізувати саме в Україні.

Ключові слова. Проривні технології, стратегія, штучний інтелект.

Introduction

Technology is changing at an astonishing pace. Not a single person doubts that statements made by Stephen Hawking and Elon Musk about AI threats to humanity are indeed sound. Moreover, experts believe that AI may be the last invention of the human civilization. Nevertheless, the historical retrospective of major scientific breakthroughs, technological progress, and industrial revolutions controverts this standpoint. Progressive scientific community has always understood the potential risks associated with new technologies and developed “safety devices” promptly. Nuclear power, genetics, and nanotechnology serve as a good example of that.

Undoubtedly, Ukrainian AI scientific communities maintain the glorious traditions of academicians V. M. Glushkov, S.O. Lebedev, O. G. Ivakhnenko. Their ideas were decades ahead of their time. Therefore, Ukrainian science has a right to be among leading countries, within a circle of industry founders. In the light of transition of the world economy from the fourth to the fifth industrial revolution, [3] it is crucial to choose the right course (strategy) for the development of AI in Ukraine to guarantee the country’s future success.

Therefore, the relevance and importance of building a strategy is confirmed by the need to ensure future competitiveness of the national economy, security and defense of the state, integration of the latest scientific

research, and development of breakthrough technologies (in particular within the Industry 4.0/5.0, Society 5.0, etc.), development of the education sector in order to tackle these challenges at least in the first half of the twenty-first century.

The prospect of developing breakthrough technologies of artificial consciousness, relevant computers and systems, software tools that will ensure the solution of the set of problems and provide significant competitive advantages to Ukraine in the modern high-tech world should be considered as a scientific novelty of the project.

It should be noted that this document clearly defines the directions of breakthrough technologies that can be introduced in Ukraine. To this end, our country has the relevant scientific and manufacturing potential. The applied implementation of scientific results obtained on the basis of the integration of this strategy into national manufacturing sector and the international market is quite well formulated and detailed. It was confirmed by a number of leading national and international

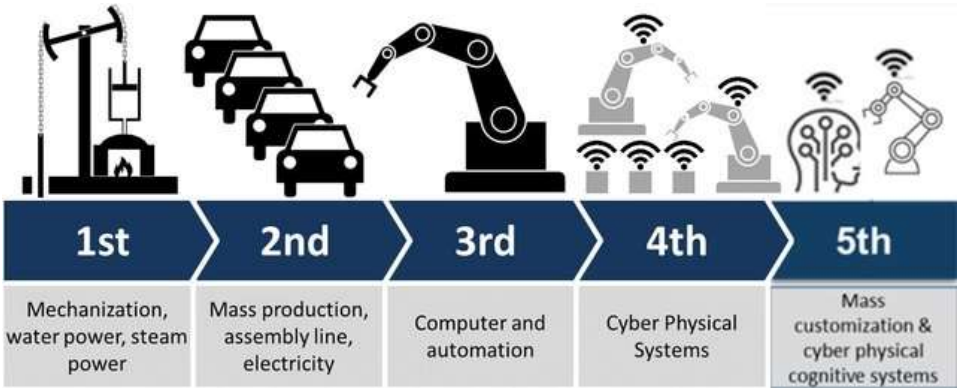

Fig. 1. Future of the Industrial Revolution [4]

stakeholders who actively participated in the discussion of the strategic plan.

Ukraine has ample workforce, scientific and engineering potential to create computing machines with artificial intelligence. Therefore, despite some technological backwardness, as long as funding and/or international cooperation is provided, all declared goals may be accomplished.

It is quite reasonable to select the human brain (personality, consciousness and intelligence) as a functional prototype for the creation of AI-powered computer. However, some proposals should be made with reference to the existing strategy. In particular, it is fairly based on modern and promising concepts Industry 4.0/5.0, Society 5.0 (Fig. 2) [5]. However, among the main sections of the document such as IoT, BigData, and Data, only Science is available.

Nevertheless, according to scientists, it was possible to predict the following approaches to the above-mentioned concepts:

- Cyberphysical Systems (CPhS);
- smart manufacturing (SmartFactory);
- virtual/augmented/artificial reality, etc.

In fact, all these approaches may be associated with the further implementation of artificial intelligence systems. In this regard, the final document will look quite balanced and include all modern trends in the development of artificial intelligence.

Fig. 2. Society 5.0 for Sustainable Development [5]

Summary

1.The competitiveness of our country in the future will depend on the ability of national scientific and engineering schools to generate and quickly implement breakthrough AI technologies. Considering the historical background, industrial capacities and resources, Ukraine is quite capable of accomplishing that task, if focuse is put on goal-directed activities within the framework of the strategy.

2.The author believes that the Ukrainian Artificial Intelligence Strategy should be promoted. Scientific schools of the Kryvyi Rih National University are ready to work on the implementation of this strategy, in particular in the mining and metallurgical complex of Ukraine.

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