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INTELLIGENT BIG DATA ANALYSIS IN THE DIGITAL ECONOMY

Annotation: This paper examines the development and implementation of modern methods of Intelligent Analysis of Big Data in the context of the development of the digital economy and innovative education in Uzbekistan. The need to develop such innovative methods considering the existing problems of the Republic, is substantiated.

Key words: digital economy of Uzbekistan, big data, artificial intelligence, coronavirus COVID-19.

Introduction

Innovative development and modernization of the economy are the main trends for both developed and developing countries. According to the Global Innovation Index (GII) [1], Central Asian countries, including Uzbekistan, rank 83rd (with a score of 24.7) in the second half of the GII table, which includes 126 countries worldwide. Kazakhstan, with the highest rank among the Central Asian countries, occupies 78th place. For comparison, Russia is ranked 59th according to this index. One of the factors contributing to this result is the relatively low level of digitalization in the economy. For example, the share of the digital economy in GDP in Uzbekistan is 2.2%, while in the UK it is 12.4%, South Korea 8%, China 6.9%, India 5.6%, Russia 2.8%, and Kazakhstan 3.9% [2].

To build a compelling digital economy, Uzbekistan has developed a "Concept for the Development of the e-Government System in the Republic of Uzbekistan for 2019–2025," which aims, by 2025, to increase the share of ICT services in GDP to 5.0%, and by 2030 to 10% [3]. According to the Concept,

priority areas for the further development of the electronic government system in Uzbekistan have been identified [3]:

- "Development of the technical infrastructure of the electronic government system, including the use of innovative technologies.
- Development of human capital, improvement of the training and professional development system for personnel.
- Digital transformation of public services.
- Ensuring openness and transparency in the activities of state bodies.
- Increasing the level of electronic participation among the population.
- Ensuring information security, protecting information resources, and systems.
- Ensuring the protection of personal data."

Among these tasks, the "development of human capital and improvement of the training and professional development system for personnel" plays an important role in the further development of innovative education as well.

Development of intelligence big data analysis in Uzbekistan

The digital economy relies on vast amounts of information that require entirely new technologies to process. These technologies are based on modern systems of Big Data Analysis (IBDA) using artificial intelligence methods. The effectiveness of such technologies is primarily due to the automation of routine tasks in the analysis of large data sets, which helps increase production efficiency in various industries.

However, the implementation of such technologies in Uzbekistan is primarily limited by the lack of qualified specialists in this field, as reflected in the Concept. This issue applies not only to specialists working with IBDA technologies but also to researchers and developers in this field. IBDA is neither included in undergraduate programs nor in graduate and doctoral programs at universities in Uzbekistan that train specialists in economics. The university

curriculum does not include training for industry specialists in innovative areas of the economy such as IBDA.

In addition, another problem limiting the introduction of high-performance technologies, including IBDA, in the Republic is the poor awareness of society regarding these innovative technologies. This also leads to a lack of funding.

A significant contribution to solving the problems of personnel training in the field of Big Data was made by the completed ELBA project, titled "Creation of Training and Research Centres and Development of Courses on Intelligent Big Data Analysis." This grant project, worth 1 million euros, was implemented as part of the Erasmus+ EU program and involved 10 universities in Central Asia, including four universities from Uzbekistan: Turin Polytechnic University in Tashkent, Urgench State University, Bukhara Engineering and Technology Institute, and the Tashkent Institute for Design, Construction, and Operation of Roads, as well as leading European universities [4].

As part of the project, equipped Centres were created at each of the Central Asian partner universities, and training courses in the field of Intelligent Big Data Analysis (IBDA) for students, specialists, and researchers were developed. These 10 IBDA Centres, established within the framework of the project, not only served as drivers of the development and implementation of high-tech technologies in the digital economy of Uzbekistan but also made a significant contribution to the further innovative development of the entire Central Asian region. It was anticipated that, based on these Centres, modern and highly demanded training courses on Big Data Analysis using Artificial Intelligence algorithms would be developed and implemented in training programs for specialists at partner universities in Central Asia. These courses have facilitated further training for working specialists, ensuring the continuity of professional education in the region and promoting the development of its innovative aspects.

Additionally, the Centres have accumulated further developments in the field of Big Data and contributed to their implementation in the economy. Another key direction for the development of the Centres was the creation of a professional network of Big Data specialists and the wide dissemination of the results among specialists and society.

Role of the Big Data Analysis in pandemic

Big Data Analysis technologies can be successfully used to address pandemics. Methods of analysing Big Data, including the use of artificial intelligence algorithms to study the problems of the COVID-19 pandemic, are undoubtedly relevant. Such methods can be effectively applied and are already being used to study various aspects of the pandemic: identifying sources of infection, tracking its spread, predicting the current situation, studying the structure of the virus, and developing methods for the treatment and prevention of coronavirus infection, among others. Examples of the use of IBDA methods in a pandemic include programs for tracking people's contacts through their mobile devices using GPS and QR codes, or even without them. Such applications have been developed by IT corporations like Apple, Google, and many others. A similar application, Trace Together, was successfully used in Singapore.

Countries are planning to use these technologies in the future to overcome the negative consequences of any epidemics. When studying a pandemic, it is necessary to process a vast array of data related to both the large number of people infected with the virus and, for example, the genetic structure of the virus. In this context, the use of IBDA methods can provide valuable and relevant results, which will undoubtedly make a decisive contribution to solving problems related to COVID-19 as well. This highlights the increasing relevance of further developing IBDA technologies globally and in Uzbekistan.

Conclusion

The study and further development of Intelligent Big Data Analysis technologies are highly relevant today, and their implementation in the economy of Uzbekistan contributes to the development of the digital economy and its innovative modernization. It will also elevate the system of continuing professional education in the republic to a new innovative level.

References:

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