

The role and application of artificial intelligence in finance, banking and other areas of the economy

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Abstract: The article analyzes the directions of development of artificial intelligence technologies and mechanisms in finance, banking and other areas of the economy. The strategic tasks set in this direction in Uzbekistan were evaluated.

Keywords: artificial intelligence, digital economy, information technology, promising technologies

Introduction

In today's conditions, where science and information and communication technologies are rapidly developing, in the developed countries of the world, state and society management, economy, industry, social protection, education, medicine, employment, agriculture, defense, security, tourism and other fields, modern information technologies and the widespread use of artificial intelligence capabilities is becoming a tradition.

In Uzbekistan, it is set as a priority task to take a place among the leading countries with innovative development by 2030 through the development of informatization and digital economy.

It should be noted that in the "Year of Development of Science, Enlightenment and Digital Economy" significant changes in information technologies and digitization were implemented and a number of important programs were adopted.

In particular, the decisions of the President of the Republic of Uzbekistan "On measures for the widespread introduction of digital economy and electronic government" and "On additional measures to automate the procedures for providing public social services and assistance to the population" and other normative legal documents in our country aimed at accelerating digitalization and introduction of modern technologies in social and economic spheres.

It is known that modern artificial intelligence consists of algorithms and software systems designed to perform various actions, and performs a number of tasks that can be performed by the human mind on the basis of information entered into the information base. Also, artificial intelligence is a "smart" technology capable of making logically consistent judgments and recommendations, including sophisticated

analytics and big data processing programs. Artificial intelligence is considered by experts as the basis of the fourth industrial revolution.

Analysis of literature on the topic

Research works by scientists from many foreign countries are devoted to the stages of development of artificial intelligence technologies and the problems of their implementation. Among them are Bostrom N. [6], Luger D.F. [7], Ross A. [8], Siegel E. [9], Schwab K.M., [10], Denning P.J., Lewis T.J. [11], Nikolenko S., Kadurin A. [12] and the works of other researchers [13-20]. The research of these authors is based on the directions of development, strategies of artificial intelligence technologies, ways and mechanisms for their future improvement.

In Uzbekistan, the problems of artificial intelligence, as well as models and methods for implementing the digital economy and information technologies, are implemented in a number of scientific works. Blockchain technologies and methods of their use were developed in the digital economy under the leadership of S.S. Gulomov [21].

Academicians of the Academy of Sciences of the Republic of Uzbekistan M.M.Komilov, T.F.Bekmurodov, Doctor of Philology, Prof. Research by D.T. Mukhamedieva [23-27] is based on promising artificial intelligence technologies and models and algorithms for intellectualizing management decision-making systems, methods and directions for modeling fuzzy information sets.

In the studies of Professor B. A. Begalov and I. E. Zhukovskaya [28], methods for using information and communication technologies in the effective organization of statistical activities were recommended.

The research of Professor A. Abdugafarov [24] highlights the initial stages of digitalization of the economy, features and results implemented in the current directions of its development.

Research methodology

It consists in summarizing and systematizing knowledge about the promising technologies of artificial intelligence, which will allow to provide the population with quality food, as well as to choose the relevant competitive advantages for the enterprises that implement them. A detailed study of various technologies and methods of artificial intelligence with a mathematical and software rationale and application to agriculture and related fields.

Analysis and results

Artificial intelligence (AI) is having a significant impact on the modern economy, changing the way companies do business, make decisions, and interact with customers. Its ever-increasing deployment and use opens up new opportunities to increase efficiency, improve service quality, and simplify operations. The main areas where

artificial intelligence will have a significant impact on the economy are finance, healthcare, manufacturing, retail and others.

The role and application of artificial intelligence (AI) in finance, banking and other areas of the economy is becoming increasingly important in the modern world. Artificial intelligence is changing the way companies make decisions, optimize processes and communicate with customers. Let's take a closer look at the role and application of AI in these areas:

I. Finance and banking:

1. Risk prediction: AI is capable of analyzing large amounts of data to identify potential risks in financial transactions. Machine learning techniques such as fraud detection algorithms can help detect anomalies and identify potential problems. AI is capable of processing and analyzing large amounts of financial data, including historical transactions, credit reports, economic indicators, and various other data. This allows you to identify hidden patterns, trends and factors that may be associated with risk. Also, based on data analysis, AI can create predictive models that help predict the probability of various financial risks, such as credit risk, operational risk or market volatility risk. In addition, using machine learning algorithms, AI can identify complex relationships between various variables and factors, which allows for more accurate risk and forecasting models. AI is also used to detect anomalous behavior that may indicate fraud or dangerous situations. This allows banks and financial institutions to quickly respond to such situations and prevent potential threats.

As a result, the use of artificial intelligence in risk forecasting in the financial and banking sectors will help to improve the efficiency of risk management, reduce the probability of financial losses and create a more stable and reliable financial system.

2. Automate selection and portfolio management processes: AI can help companies manage their investment portfolio by making recommendations based on historical data and current market conditions.

Automating investment portfolio selection and management processes is another area where artificial intelligence (AI) can greatly benefit companies in finance and investment management. How AI can help in this field:

Predicting market trends: AI is able to analyze historical data on market trends, including price dynamics, trading volumes and financial indicators, to identify trends and predict possible market movements. This allows companies to create more informed portfolio management strategies.

-Prediction of risks and opportunities: AI helps identify potential risks and opportunities in the investment market based on comprehensive data analysis. Machine learning algorithms can determine the relationship between various factors and analyze their impact on investment success.

-Personalized recommendations: Using information about investors' goals, preferences, and risk levels, AI can offer personalized portfolio management recommendations that help investors make informed decisions that match their goals and risk profile.

-Alternative data analysis: In addition to traditional financial data, AI can analyze alternative data sources such as news sources, social media and other data to gain a more complete understanding of the factors influencing market conditions.

-Data-driven portfolio management: AI can automatically manage a portfolio based on predefined parameters and goals, allowing for more disciplined and informed investment strategies.

Due to these possibilities, the use of artificial intelligence in the automation of investment portfolio selection and management processes facilitates more accurate and informed management of the investment portfolio, which can lead to improved trading operations and financial results of the company.

3. Personalized service: The use of AI allows banks and financial institutions to create personalized offers and services that take into account the individual needs and preferences of customers.

In fact, the use of artificial intelligence allows banks and financial institutions to create personalized offers and services that take into account the individual needs and preferences of customers. Benefits of using AI in this industry:

1) Customer data analysis: AI can analyze large amounts of customer data, including transaction history, preferences, behavior and other factors, to better understand customers' individual needs.

2) Personalized Recommendations: Based on customer insights, AI provides personalized offers and recommendations such as loan products, investment opportunities or credit cards that suit the customer's individual needs.

3) Customer Service: AI is used to automate customer service with chatbots that can quickly process customer queries, interact with them and provide real-time solutions.

4) Demand Prediction: AI algorithms help predict customer needs based on their past behavior, which enables offering services or products based on customer expectations.

5) Advertising and Marketing Strategies: Analyzing customer data through AI is also used to formulate more effective advertising and marketing strategies that can be more relevant and attractive to customers.

By using personalized approaches to the delivery of financial services and products, banks and financial institutions can improve the level of service, customer satisfaction and increase the likelihood of retaining the customer base.

II. Other areas of the economy:

1. **Manufacturing and Operations:** Manufacturing companies are using AI to optimize processes, schedule production, and manage inventory to reduce costs and improve efficiency.

In manufacturing and operations, intelligent programming (AI) and robotics (RT) are widely used to optimize various processes. AI and RT machines will help advance this field as they have the ability to effectively manage remote external application systems, hardware, operations, and job data. For example, these technologies help manage production recommendations, product information, and safety to improve efficiency and completion of manufacturing processes with automated control systems.

2. **Mass production:** AI and RT are applied to automated process protection, monitoring, production process mastery, and production process level control to help drive it, improve convenience, and improve efficiency.

3. **Technical equipment and tooling:** AI and RT, production and tooling can help improve the efficiency of the production and operation processes, supply acquisition, automation and other key processes planning.

At the same time, innovations in the field of soft technologies, with the help of AI and RT, continue to apply modern approaches to production processes, which are able to provide sufficient efficiency and comfort.

In the retail industry, AI is used to analyze shopping behavior, personalize offers, manage inventory and forecast demand. Software Intelligence (DI) is important in business. Software Intelligence is used in retail to predict seller satisfaction, offer personalization, product availability management, and gift forecasting. This is one of the special areas of the new technology in practice, and it includes new places in the improvement of convenience and efficiency in modern retail production.

DI also plays a very important role in changing retail sales methods and increasing the effectiveness of product purchasing systems.

4. **Healthcare:** In healthcare, AI is used to analyze medical data, diagnose and assist in clinical decision making. In healthcare, intelligent programming (AI) is being widely used to aid in medical data analysis, diagnosis and clinical decision making. AI helps diagnoses by analyzing medical history at the scale of a large embedded database in medical data review. AI helps with medical classification, diagnosis, and basic medical tasks. Also, AI is widely used in the analysis of clinical data, statistical information about medical conditions, optimization of anesthesia and monitoring. AI will help in automating healthcare services as well as receiving patient data, receiving complaints and identifying errors.

AI is essential in providing quality healthcare services and improving the diagnosis process. These technologies are used as effective assistants for patients and healthcare providers and create new and many conveniences in healthcare.

III. Role of AI:

AI plays an important role in automating processes, making data-driven decisions, personalizing services and improving operational efficiency. Machine learning techniques, neural networks, and natural language processing (NLP) algorithms are used to analyze large amounts of data and make predictive decisions.

The role of AI is significant in massive data analysis, automation, personalization of services, and increased operational efficiency. Machine learning techniques, neural networks, and natural language processing (NLP) algorithms are used to analyze large volumes of data and make predictive decisions.

-AI helps in automating the processes so that it performs the accumulated work of the operators in a understandable time and creates the opportunity to increase the operational efficiency.

- AI helps processes to collect data, analyze it and learn the experience from the data. It helps to generate useful information and define new strategies.

- AI helps create personalized services, such as authoring special offers to customers. This helps in tailoring personalized billing based on the information that matters most to customers.

- AI, including automated processes, will be used for big data analysis, planning and simulations, thus enabling the expansion and optimization of operational efficiency.

These technologies are important for the operational implementation of activities, the release of useful information and decision-making based on it. AI is essential in identifying critical issues and causes in business to expand innovative approaches and improve operational efficiency.

IV. Challenges and future:

Despite its many advantages, the use of artificial intelligence raises problems related to data security, underestimation of risks and ethical issues. However, the prospects for the use of artificial intelligence in the economy are extremely high, as can be seen from the growth of investments and developments in this area.

In the use of artificial intelligence, security and ethical issues are important considerations in the process of investment and productivity in this field. In order to develop in the field of artificial intelligence and robotics, it is very important to deal with measures aimed at protecting data, solving emerging technological security problems and preventing problems of distrust.

At the same time, it can be recognized that the effective use of artificial intelligence and robotics, combined with measures aimed at creating innovations and modifying employment strategies and legal personnel, can achieve high progress. Such actions will contribute to the successful implementation of the research necessary for the study of the place of artificial intelligence, the latest technologies and digital

approaches for the creation of independent special communication networks at the modern economic level.

Conclusions and suggestions

Thus, AI has turned from a promising technology into an integral component of doing business and making decisions in finance, banking and other sectors of the economy. In conclusion, it can be noted that in our country there are opportunities and the need to rapidly apply the capabilities and technologies of artificial intelligence in the real sector of the economy, and it is appropriate to introduce and apply artificial intelligence technologies by attracting leading local experts and foreign companies in the relevant programming areas.

It is worth noting that a superficial approach to the introduction of artificial intelligence or various software and ICT in the relevant fields, firstly, the projects will not produce the expected results, secondly, the spent budget funds will be ineffective, and thirdly, programs and systems that are not up to date will become targets of cybercriminals and undermine national security. and may lead to the leakage of confidential and private information. Therefore, such state programs are required to be implemented by leading local and foreign experts and companies in the field.

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