

**INTELLIGENT DATA ANALYSIS AND ITS APPLICATION IN
VARIOUS FIELDS.**

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Annotation. *The article presents the possibilities of intelligent data analysis, automatic data analysis, and extraction of useful knowledge from data, due to the fact that the amount of data generated around the world is very large and frequently updated, and the need to use advanced technologies such as artificial intelligence and machine learning in data collection and analysis.*

Key words: *Data, quantity, collection, analysis, artificial intelligence, machine learning, technology, intelligent analysis, revolutionary change, decision-making.*

Аннотация. *В статье представлены возможности интеллектуального анализа данных, автоматического анализа данных и извлечения полезных знаний из данных, обусловленные тем, что объем данных, генерируемых по всему миру, очень велик и часто обновляется, а также необходимостью использования передовых технологий, таких как искусственный интеллект и машинное обучение, при сборе и анализе данных.*

Ключевые слова: *Данные, количество, сбор, анализ, искусственный интеллект, машинное обучение, технологии, интеллектуальный анализ, революционные изменения, принятие решений.*

Today, the volume and variety of data is growing rapidly. There is also a growing need to effectively analyze this data and extract useful knowledge from it for users. "Intelligent data analysis" (MIT) is the process of analyzing complex, large volumes of data and extracting human-readable knowledge from it. This analysis usually uses artificial intelligence (AI) and machine learning (ML) technologies. The



main goal of MIT is to extract valuable knowledge and decisions from data, make new discoveries, and ultimately make effective and realistic decisions.

Data mining is actually different from analyzing data using only statistical methods. It uses advanced technologies such as artificial intelligence, machine learning, and natural language processing (NLP) to identify features, patterns, trends, and other unknown factors in the data. The main elements of such analysis are:

It is important that the data is correct and complete. Therefore, data collection, cleaning, and normalization are important steps in the MIT process.

The data is analyzed and arbitrary patterns and relationships are extracted from it. Clustering, regression, classification, and other techniques are used in this process.

Data mining: The goal is not just to collect data, but to extract useful knowledge from it. Through artificial intelligence technologies, this knowledge is used to support analytical decisions.

Results from the analyzed data are presented using visualizations, reports, or interactive systems. This helps decision makers make informed decisions based on the data.

The main technologies and methods used in data mining are:

Data is studied using machine learning algorithms, which allows new predictions or decisions to be made based on them. ML technologies are divided into two types: supervised learning and unsupervised learning. In supervised learning, predetermined results are added to the data, while in unsupervised learning, the system tries to identify relationships between the data.

Texts written or spoken by humans are analyzed using natural language processing technologies. This method extracts semantic information, concepts, and relationships from the texts.

Deep learning technologies are used to solve highly complex tasks. Neural networks are multi-layered systems that allow the analysis of very complex patterns and relationships.



Data mining is not only about textual data, but also about images and videos. Image recognition technologies are used to analyze images.

For effective data analysis, it is necessary to present data graphically. With the help of visualization, the analyzed data is presented in a visual way and facilitates the decision-making process.

Data mining is used in various fields and its benefits are numerous:

Data mining is used to develop marketing strategies, analyze customer behavior, and create product recommendations. Through data mining, companies can better connect with their customers and create personalized marketing campaigns.

Banks and financial institutions can use data mining to assess credit risk, manage portfolios for investors, and minimize financial risks.

In the Bible, data mining is used to optimize healthcare processes. For example, in diagnostic systems, disease prediction, patient data analysis, and personalized treatment plans.

Data mining is used to improve manufacturing processes, control quality, and manage resources more efficiently. They increase the efficiency of manufacturing systems and reduce energy consumption.

Data mining is used to analyze social issues and policies. This will enable effective decisions to be made in areas such as public health, education, social assistance, and many others.

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