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## APPLICATION OF ARTIFICIAL INTELLIGENCE IN AUTOMATED FINANCIAL RISK MANAGEMENT SYSTEMS

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*The purpose of the research is to apply artificial intelligence in automated financial risk management systems in order to increase the accuracy, efficiency and effectiveness of management decision-making in the financial sector. As part of the research, a model for predicting the credit risk of bank customers has been developed, which allows assessing solvency based on historical data and modern machine learning methods. The object of the research is automated financial risk management systems operating in the banking and financial sector. The subject of the research is algorithms and models of artificial intelligence that can be integrated into automated financial risk management systems in order to increase the accuracy of forecasts and identify risky customers. The research method is modeling using machine learning tools, in particular neural networks and ensemble learning methods. The result of the research is the creation of an effective credit risk forecasting model that demonstrates a high level of classification accuracy and the ability to adapt to changing input conditions.*

Statement of the problem.

Financial risk management is a key area of activity for financial institutions, banks and corporations. In today's dynamic market development and high competition, automated financial risk management systems (AFMS) have become an integral component that provides collection, processing and analysis of large volumes of data for timely identification of potential threats and decision-making.

These systems integrate various tools and technologies, including statistical analysis and modeling methods, as well as the latest intelligent approaches. In recent years, considerable attention has been paid to the use of artificial intelligence (AI) algorithms, which are able to increase the accuracy of forecasts and the adaptability of systems to changing conditions. Structurally, the ACS of the financial system consist of data collection modules, analytical tools, decision support systems, and monitoring and control modules [1].

Thus, financial risks are a complex phenomenon that encompasses various types and sources of uncertainty, and their management requires the use of integrated approaches, including the use of modern automated systems and artificial intelligence technologies to improve the quality of analysis and forecasting of risk factors.

Financial risk management also requires the use of decision support systems based on artificial intelligence that integrate real-time analytics, model different scenarios, and generate recommendations for management.

Thus, artificial intelligence technologies in the financial sector create new opportunities for increasing the efficiency of financial risk management, automating analytical processes and adaptively responding to external and internal threats, which confirms their important role in modern automated management systems. The application of modern technologies in the financial sector makes it possible to significantly reduce various risks, optimize processes and increase the efficiency of institutions.

Presentation of the main material.

Artificial intelligence is a branch of computer science that deals with creating systems that can perform tasks that normally require human intelligence. Such tasks include pattern recognition, natural language processing, decision-making, and forecasting. In modern conditions, AI is an important tool in the financial sector, particularly in risk management, where accuracy, speed, and volume of data processing play a critical role.

Financial risk management traditionally involves risk assessment, monitoring, and decision-making. AI can significantly improve these processes by automating routine tasks, improving forecast accuracy, and reducing subjectivity.

For example, based on historical data, machine learning models can detect complex relationships between variables that affect credit, market, or operational risk.

A key advantage of AI in risk management is its ability to adapt to changing market conditions. Traditional models usually have a fixed structure and limited update capabilities. In contrast, AI systems are able to self-learn from new data, which makes them particularly effective in a dynamic environment. In addition, through integration with digital platforms, AI can work in real time, which significantly improves the speed of response to potential threats.

In the field of financial analysis, AI also serves as an analytical tool for building forecasting models, analyzing scenarios, detecting fraudulent transactions, and increasing the overall security of the financial system.

Of particular importance is the use of explainable models (Explainable AI), which allow us to obtain not only a result, but also to understand the logic of decision-making, which is critical for financial institutions operating in a strictly regulated environment.

In general, the role of AI in risk management is to optimize the processes of identifying, assessing and responding to financial threats. The use of intelligent algorithms allows you to reduce decision-making time, minimize the influence of the human factor and increase the effectiveness of the risk management system.

As part of the research, a practical case study was implemented to build a model for predicting the credit risk of bank clients. The main goal is to create an intelligent classification system capable of determining whether a client will be able to service a loan on time in the future. Such a system allows the bank to reduce the probability of losses due to non-repayment of loans, increase the effectiveness of risk management, and make informed credit decisions.

The simulation used an open dataset from the Kaggle platform — Home Credit Default Risk. This dataset contains over 300,000 customer records with various characteristics, such as age, income level, number of dependents, credit history, housing type, employment, etc.

Data cleaning and transformation were performed. A significant number of missing values were identified and removed in categories where imputing was not appropriate. Numerical features were normalized using a mini-max scale.

Categorical variables were encoded using one-hot encoding for compatibility with machine learning algorithms. The sample was also balanced using the SMOTE method to eliminate imbalance between classes (solvent and insolvent clients).

Conclusions.

The study analyzed the opportunities, benefits, and challenges of applying artificial intelligence in automated financial risk management systems.

An analysis of theoretical foundations, classification of financial risks, technical features of the implementation of intelligent systems, as well as practical modeling using the example of credit risk forecasting was conducted.

General approaches to financial risk management are considered, their classification and features in modern economic conditions are determined.

The basic principles of building an ACS were analyzed and the feasibility of implementing intelligent methods, in particular machine learning and neural networks, in financial analytics was substantiated.

An analysis of modern artificial intelligence methods used for risk analysis and forecasting was conducted.

The features of deep learning models, decision trees, ensemble methods, as well as criteria for assessing their effectiveness are considered.

Particular attention is paid to the issues of interpretability of models, which is an important factor for the implementation of AI in risk management practice in accordance with regulatory requirements.

A practical case study was implemented to build a model for predicting the credit risk of a bank client.

Pre-processing of real data was carried out, several models were built and tested, and accuracy was assessed using metrics.

An analysis of the importance of features using SHAP graphs was carried out and a system architecture was substantiated that can be used to integrate such a model into a practical automated financial risk management system.

Overall, the results of the study confirm the high effectiveness of using artificial intelligence methods for automated analysis and forecasting of financial risks.

Such models can not only increase the accuracy of risk identification, but also ensure the efficiency of decision-making in financial institutions.

However, their implementation requires proper technical and organizational support, including issues of interpretability, validation, and adaptation to changes in the market environment.

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## USING WORDPRESS CONTENT MANAGEMENT SYSTEM TO AUTOMATE BUSINESS PROCESSES

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*The purpose of the research is to determine the optimal approaches to implementing the WordPress system, which not only publishes content, but also acts as a tool for automating key business processes. The object of the research is the process of implementing WordPress as a tool for automating business processes in the environment of small and medium-sized enterprises that need to optimize their work. The subject of the research is a set of methods and tools that allow implementing the automation process, starting from internal WordPress mechanisms and some extensions and ending with integrations with third-party data processing services.*

Statement of the problem.

The analysis shows that more and more enterprises are striving to simplify and speed up daily tasks in order to allocate more time for strategic development. In this context, WordPress has long ceased to be a purely blogging platform - it can become the basis for building a full-fledged information system capable of automating many business processes [1].