

USING ARTIFICIAL INTELLIGENCE FOR CREDIT RISK MANAGEMENT

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Анотація

У статті досліджено вплив штучного інтелекту (ШІ) на процес управління кредитними ризиками в банківській сфері. Проаналізовано такі ключові аспекти, як аналіз та передбачення кредитних ризиків, автоматизація процесу кредитного схвалення, виявлення шахрайства та аномальної поведінки, а також персоналізоване управління ризиками. Розкрито основні проблеми та шляхи їх вирішення.

Ключові слова: кредитний ризик, штучний інтелект, управління кредитними ризиками, новітні технології.

Abstract

The article examines the impact of artificial intelligence (AI) on the process of credit risk management in the banking sector. The following key aspects are analyzed: credit risk analysis and prediction, automation of the credit approval process, detection of fraud and abnormal behavior, and personalized risk management. The main problems and ways to address them are discussed.

Key words: credit risk, artificial intelligence, credit risk management, the latest technologies

Introduction

Credit risk management in the banking sector requires accuracy, speed, and predictive capabilities. However, traditional methods of assessing credit risk may be insufficient due to the increasing volume of data and the complexity of financial transactions. This is where artificial intelligence (AI) comes into play – a technological tool that enables the automation and optimization of credit risk management processes. In this article, we will explore the use of artificial intelligence for credit risk management and its potential advantages.

Main part

Credit risk analysis and prediction play a crucial role in the banking industry. The ability to accurately assess the creditworthiness of borrowers and predict potential risks is essential for making informed lending decisions. With the application of advanced technologies like artificial intelligence (AI), the process of analyzing and predicting credit risks has been significantly enhanced. By leveraging AI algorithms and machine learning techniques, banks can effectively analyze vast amounts of data related to a borrower's financial history, credit scores, income, employment, and other relevant factors. This allows for a more comprehensive evaluation of creditworthiness beyond traditional credit scoring models [1].

AI-powered credit risk models can identify complex patterns and relationships within the data, helping to uncover hidden risk factors that may not be apparent through manual analysis alone. These models can continuously learn and adapt based on new data, improving their accuracy and predictive capabilities over time.

Furthermore, AI enables banks to automate and streamline the credit risk assessment process. By integrating AI systems into their operations, banks can expedite the evaluation of loan applications, reduce manual errors, and make faster lending decisions. This not only improves efficiency but also enhances the overall customer experience by providing quicker responses and seamless application processes [2].

In addition to improving the accuracy and efficiency of credit risk analysis, AI also enables banks to better predict and manage potential risks. By analyzing historical data, market trends, and macroeconomic indicators, AI models can generate forecasts and simulations to assess the likelihood of default or delinquency. This proactive approach allows banks to implement risk mitigation strategies, such as adjusting credit terms, setting appropriate interest rates, or offering alternative financing options.

The adoption of AI in the banking sector has seen a remarkable surge on a global scale. According to Allied Market Research [3], the market value of AI in banking reached \$3.88 billion in 2020 and is projected to reach an astonishing \$64.03 billion by 2030. Other estimates suggest even higher figures, with Statista indicating that the Asia Pacific region alone is expected to witness a business value of \$99 billion from AI in banking by 2030 (see Fig. 1).

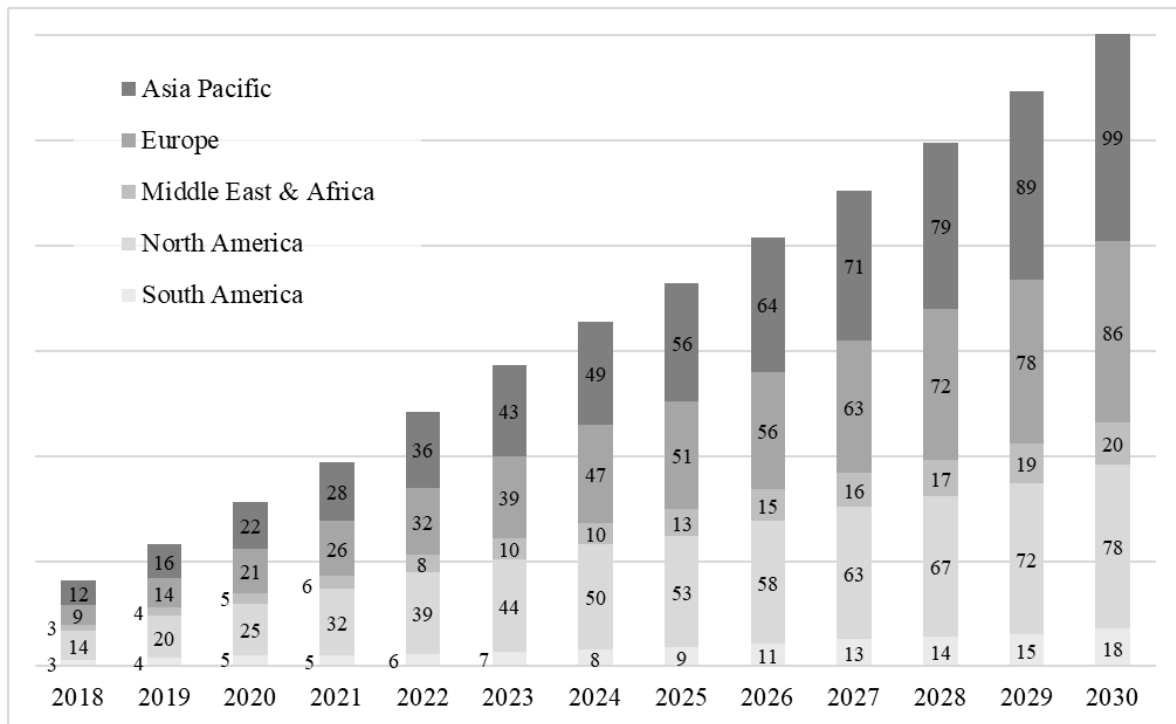


Figure 1 – The business value derived from AI in the banking industry worldwide

The traditional credit approval process can be complex and time-consuming. The use of artificial intelligence enables the automation of this process by employing machine learning algorithms to automatically assess a client's creditworthiness. AI can analyze input data, including financial information and client's personal data, and quickly determine the probability of successful loan repayment. This simplifies decision-making processes and reduces the risk of incorrect judgments [4].

Artificial intelligence can be utilized to detect fraud and anomalous behavior of clients. Machine learning algorithms can analyze large volumes of data, including transactional data and past fraud cases, to identify atypical patterns and signals indicating potential fraud. This allows banks to quickly respond to potential threats and prevent losses.

Artificial intelligence enables banks to create personalized approaches to risk management. By analyzing customer data and financial behavior, AI can develop individualized strategies to mitigate risks and create favorable conditions for clients. This may include personalized credit offerings, optimal credit limits, and tailored repayment plans [5].

Conclusions

The use of artificial intelligence for credit risk management opens up new opportunities for the banking sector. AI enhances the accuracy and speed of risk assessment, automates the credit approval process, detects fraud and anomalies, and enables personalized risk management approaches. However, it is important to consider ethical aspects and ensure proper control over the use of artificial intelligence in credit risk management. Understanding and implementing AI pave the way for more efficient and progressive credit risk management in the banking sector.

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