

INTEGRATING ARTIFICIAL INTELLIGENCE TECHNOLOGY INTO BUDGET PLANNING APPLICATIONS TO FORECAST FINANCIAL EXPENSES

The modern world is characterized by rapid changes and high dynamics of financial markets, which require practical approaches to analysis and decision-making. Traditional financial planning methods have limitations, mainly due to the risk of errors. The introduction of artificial intelligence (AI) opens up new opportunities for automating processes, forecasting, and data analysis in real-time, increasing financial management's efficiency and accuracy.

However, integrating AI brings challenges, particularly the lack of emotional intelligence, cybersecurity and the difficulty of considering social aspects, which emphasizes the importance of human-AI cooperation.

The study focuses on integrating AI into financial applications for budget planning, particularly on improving cost forecasting, task automation, and decision accuracy. It also analyzes issues of ethics, cybersecurity, and limitations of AI in financial advice. The goal is to determine the effectiveness of human-AI collaboration in financial planning.

Integrating artificial intelligence into financial applications is an essential stage in the evolution of modern financial technologies. Historically, financial planning has depended on the intuition, experience, and skills of specialists, but modern technologies allow you to perform complex calculations and analyses in seconds. Integrating AI into the financial sector has become an impetus for change.

Introducing artificial intelligence into financial applications allows you to automate processes such as monitoring expenses, forecasting financial needs and making recommendations for budget allocation. Machine learning algorithms help create more accurate forecasts and quickly respond to changes in financial conditions, such as changes in exchange rates or prices.

AI can automatically collect data on expenses and income, thanks to integration with bank accounts and cards. This allows users to have up-to-date data in real-time and reduce the risk of human error. In addition, such applications can offer recommendations on how to optimize expenses, compare current expenses with planned ones, and suggest changes to achieve financial goals.

AI also simplifies spending, budget control, and notifications about exceeding limits, which allows you to avoid unplanned expenses and save money. Thanks to algorithms that learn from previous data, it is possible to predict not only regular payments but also seasonal fluctuations in expenses so users can better prepare for unexpected situations.

However, integrating AI faces challenges in cybersecurity, as well as social and emotional aspects. Processing large amounts of data creates risks for protecting personal information, as attackers may try to gain access to users' financial data. Therefore, data protection is critical. It is necessary to use effective encryption methods, multi-level authentication, and modern technologies to detect and prevent attacks.

AI does not have emotional intelligence, so algorithms cannot consider all social and emotional factors that can influence financial decision-making [1]. For example, it is essential to consider the individual needs of each family member when making decisions about large purchases. Also, predictions may not consider the characteristics of specific users, such as their goals, priorities or unforeseen situations. This highlights the need for humans to evaluate AI recommendations based on individual circumstances.

The use of AI in financial planning also raises ethical questions. Algorithms work with data that can be inaccurate or biased, sometimes leading to erroneous recommendations or even unequal treatment of different users. It is also important that algorithms' methods of operation are understandable to humans, as users have the right to know how the financial advice they receive is formed.

Therefore, technology must support human decision-making to help achieve financial goals. The right combination of technology and human expertise creates a powerful financial management tool. As AI algorithms improve, these applications may become even more efficient, able to adapt to changing market conditions and personalize the user experience.

References

1. Kunnathuvalappil H., Naveen: Artificial Intelligence and human collaboration in financial planning. 2018. Vol. 5, No. 7: pp. 1348-1355.. URL: <https://mpr.ub.uni-muenchen.de/id/eprint/109515> (accessed: 20.11.2024).