

FinSight: Budget Tracking Application with AI Insights

Prof. Snehal Ralebhat, Saily Sanjay Jagdale, Samiksha Sham Jadhav, Cherry Siddharth Sonsale,
Prathamesh Santosh Indalkar

Department of Computer Engineering, JSPM Narhe Technical Campus, Pune, Maharashtra, India

Abstract - This paper presents a Budget Tracking Application integrated with Artificial Intelligence (AI) to improve personal financial management. Traditional expense tracking systems mainly focus on recording transactions but lack analytical and predictive capabilities. The proposed system overcomes these limitations by incorporating intelligent modules such as AI-based insights, financial calculators, budget goal tracking, and survival runway estimation. The application analyzes user spending behavior, identifies patterns, and generates personalized recommendations to optimize savings and reduce unnecessary expenses. Additionally, features such as expense projection and FIRE (Financial Independence Retire Early) planning assist users in long-term financial decision-making. The system is designed using modern web technologies with a user-friendly interface and efficient backend support. Experimental observations indicate that the application enhances financial awareness and supports better decision-making. The proposed solution acts as a smart financial assistant rather than a simple tracking tool, providing both analysis and guidance to users.

Key Words: Budget Tracking, Artificial Intelligence, Expense Analysis, Machine Learning, Financial Forecasting, Personalized Recommendations.

1. INTRODUCTION

In today's digital era, managing personal finances has become a critical aspect of everyday life. With increasing expenses and complex financial decisions, individuals often find it difficult to monitor their spending and maintain financial stability. Although several budgeting applications are available, most of them provide only basic functionalities such as expense recording and report generation, without offering intelligent insights or predictive analysis.

To address these challenges, this paper proposes a Budget Tracking Application with integrated Artificial Intelligence (AI) capabilities. The system not only records financial transactions but also analyzes user behavior, identifies spending trends, and provides meaningful recommendations. By incorporating advanced features such as AI insights, budget goal tracking, financial calculators, and survival runway estimation, the application enhances user engagement and decision-making.

The objective of this system is to transform traditional financial tracking into an intelligent and proactive process. It helps users understand their financial habits, plan future expenses, and achieve financial goals efficiently. The integration of AI techniques makes the system more adaptive, accurate, and user-centric compared to conventional solutions.

2. Body of Paper

2.1 Existing Learning Management Systems and Their Limitations

Existing budget tracking systems help users record and monitor their income and expenses. These applications typically provide basic functionalities such as expense categorization and graphical representation of financial data. While they are useful for maintaining records, they lack advanced analytical and predictive capabilities. As a result, users are unable to gain deeper insights into their financial behavior or plan effectively for future financial goals.

Key Features of Existing Systems:

- Expense and income tracking
- Categorization of transactions
- Basic charts and reports

Limitations:

- No Artificial Intelligence (AI)-based insights
- Lack of expense prediction and future planning
- Limited personalization for users

- Absence of advanced tools like survival runway or FIRE planning

These limitations highlight the need for a more intelligent and integrated financial management system.

2.2 Role of Artificial Intelligence in Financial Management

Artificial Intelligence (AI) has significantly transformed the way financial data is analyzed and utilized. In the context of personal finance, AI can be used to identify spending patterns, detect anomalies, and generate meaningful insights. By analyzing historical data, AI algorithms can predict future expenses and suggest optimized budgeting strategies. This enables users to make informed financial decisions and improve their saving habits. The integration of AI into financial applications enhances automation, accuracy, and personalization, making financial management more efficient and user-centric

2.3 Financial Planning Tools: Current Trends

Financial planning tools such as EMI calculators, investment planners, and retirement estimators are widely used to assist users in managing their finances. These tools provide valuable information regarding loan repayments, savings growth, and long-term financial goals. However, most of these tools are available as standalone applications and are not integrated into a single platform. As a result, users need to switch between multiple tools, which reduces convenience and efficiency. The current trend indicates a growing demand for unified systems that combine multiple financial planning features in one application.

Furthermore, many of these tools rely on static inputs and do not adapt based on user behavior or changing financial conditions. They also lack real-time insights and intelligent recommendations, which limits their effectiveness in dynamic financial environments.

2.4 Web Technologies for Financial Applications

Modern financial applications are developed using advanced web technologies to ensure scalability, performance, and security. The proposed system utilizes a

combination of frontend, backend, and database technologies to provide an efficient user experience.

Technologies Used:

- **Frontend:** HTML, CSS, JavaScript (for responsive and interactive UI)
- **Framework (optional):** React.js (for dynamic components)
- **Backend:** Firebase / Node.js (for handling business logic and APIs)
- **Database:** Firebase (for real-time cloud data storage)
- **Version Control:** Git and GitHub (for project management)

Advantages of Selected Technologies:

- Supports real-time data updates
- Ensures scalability and flexibility
- Provides secure data handling
- Enhances user interface responsiveness

These technologies collectively enable the development of a robust and user-friendly financial application.

The integration of Artificial Intelligence (AI) enhances the capabilities of traditional budget tracking systems by enabling data-driven insights and predictions.

AI Functionalities in the System:

- Spending pattern analysis
- Expense prediction based on past data
- Personalized financial recommendations
- Detection of unusual or excessive spending

Working Flow:

1. User enters financial data
2. Data is stored in the database
3. AI processes the data using analytical techniques
4. Insights and suggestions are generated

This integration transforms the application into a smart financial assistant that provides proactive guidance to users

2.5 Research Gaps Identified

The analysis of existing systems reveals several limitations that need to be addressed.

Identified Gaps:

- Lack of AI-based financial analysis
- Absence of predictive features for future expenses
- No integrated platform combining multiple financial tools
- Limited user personalization
- Missing features like survival runway estimation

These gaps highlight the necessity for a more advanced and intelligent financial management system

2.6 Summary of Reviewed Literature

• Sharma and patel (2022):

Designed a mobile-based financial management system with expense categorization and monthly reports. Integrated notification features to alert users about budget limits. The application enhanced short-term financial tracking.

Limited by lack of personalized recommendations and advanced financial planning tools.

• Lee et al. (2023):

Proposed a smart finance application incorporating machine learning for expense classification. The system automatically categorized transactions and reduced manual effort. It improved efficiency in managing financial records.

Limited by restricted prediction capabilities and absence of long-term planning features.

• Gupta (2024):

Developed an AI-assisted budgeting system that provides spending insights and basic recommendations. Integrated cloud-based storage for real-time data access. The system offered improved financial visibility.

Limited by lack of integrated tools such as survival runway and FIRE planning.

2.7 Research Directions and Opportunities

There are several opportunities to enhance the proposed system in the future by integrating advanced technologies and features.

Future Enhancements:

- Integration with banking APIs for automatic expense tracking
- Use of advanced machine learning models for better predictions
- Development of chatbot-based financial assistants
- Voice-based expense entry system
- Personalized financial advisory features

These improvements can further enhance the usability and effectiveness of the system.

3. CONCLUSIONS

The proposed Budget Tracking Application with Artificial Intelligence (AI) Insights provides an effective solution for managing personal finances in a smarter and more efficient way. Unlike traditional systems, the application not only tracks expenses but also analyzes financial data to generate meaningful insights and predictions. The integration of modules such as AI insights, financial calculators, budget goals, and survival runway enhances the overall functionality and usability of the system.

The application helps users understand their spending patterns, plan future expenses, and make informed financial decisions. Features like expense prediction and FIRE (Financial Independence Retire Early) planning contribute to long-term financial stability. The system demonstrates how AI can be applied to improve everyday financial management.

In the future, the system can be further enhanced by incorporating advanced machine learning models, real-time banking integration, and personalized financial advisory features. Overall, the proposed system acts as a smart financial assistant that supports users in achieving their financial goals effectively.

ACKNOWLEDGEMENT

The authors would like to express their sincere gratitude to our project guide and faculty members for their continuous support, valuable suggestions, and guidance throughout the development of this project. Their insights and encouragement played a significant role in completing this work successfully.

We also thank our institution for providing the necessary resources and environment to carry out this research. Finally, we are grateful to our friends and family members for their motivation and support during the project development phase

REFERENCES

1. A. Saraboji and S. Lakshmi, "Expense Tracker Application," *International Journal of Research*, 2024.
2. B. S. Singh, A. M. Akash, B. Lyngkhoi, and V. Anitha, "Money Map: Expense and Budget Tracker," *International Journal of Scientific and Computational Intelligence*, 2025.
3. P. Sahu *et al.*, "AI Expense Tracker," *International Journal for Research in Applied Science and Engineering Technology (IJRASET)*, 2025.
4. J. Mohan, D. S. Tonape, D. Bhargav, G. V. Reddy, and K. Akshay, "Expense Tracker using OCR and Random Forest Algorithm," *International Journal of Engineering Research and Science & Technology*, 2025.
5. R. Shirke, A. Sabde, P. Swami, and R. Chavan, "Budget Buddy: AI-Powered Personal Finance Management System," *International Journal of Scientific and Computational Intelligence*, 2025.