

Wealth: An AI-Driven Intelligent Platform for Personal Finance Management and Automated Financial Insights

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ABSTRACT

Personal finance management has in recent years gained a lot of complexity with the development of digital payment solutions, the multiplicity of bank accounts, and the variety of categories of expenses. The conventional approach to finance tracking software is to use a manual input of data and merely track finances without any intelligent clues on how to keep personal budgeting and personal finances in hand. To overcome these limitations, this project will present an AI-based Personal Finance Management Platform categorised as the Wealth to provide automated and customised financial answers. We will have five core modules based on our system; Account Management, Transaction Tracking, Budget Monitoring, AI-Based Receipt Scanning and Intelligent Financial Reporting. By using AI automation, users are able to scan the receipts to auto-fill the transaction information, intelligent categorize expenses, getting the AI generated financial report on what to spend

and orderly optimising the end month expenses. Its front end framework is the new trend of web technology and the backend part was built to include quality backend services through Prisma ORM and PostgreSQL database through Supabase and AI capabilities with the help of Gemini AI to scan the receipt (input) and provide insights. Background Inserts such as batch programs to perform recurring transactions and scheduling of reports are achieved with the help of Inngest hence providing up to date data in real-time and automated. The laboratory tests conducted based on realistic financial data contexts show the platform can substantially decrease the amount of manual processing, increase the accuracy of budgeting, and improve the degree of user interaction with the mechanism provided by dynamic representations and alerts. This mechanism shows a successful example of integrating AI-based automation with financial organization to automate enactment of personal finance tasks, and, overall, make people more capable of managing their finances and being more conscious of their money management.

KEYWORDS: *Artificial Intelligence Finance Management, Cost- Tracking Robot, Smart Budget Manager, Receipt Scanning in artificial intelligence, Personal Finance Knowledge, Robotization in FinTech, Multi-Account Financial Applications*

INTRODUCTION

In the age of the digital world, even ordinary people face greater complexity in managing multiple income sources, various expenses and multiple budgeting requirements across accounts. Various conventional bank finance management tools can work, but they are not always sufficient since they require manual data entry and do not offer much insight. This discontinuity has brought about demands for smart platforms which are capable of automating the financial tracking and making personalized suggestions. Wealth is an AI-driven intelligent platform that automates the personal financial management process and generates financial insights, which solves the mentioned issues by combining high-end artificial intelligence and the latest web technologies. Having money allows the user to monitor costs, keep budgets and get AI-derived financial advice scanning receipts, auto categorization and monthly feedback. As the automation is merged with an easy-to-learn user interface, the platform does not only save manual work but also allows individuals to take more informed financial choices on the path to a sustainable financial

health.

LITERATURE SURVEY

The increasing level of complexity of sophistication of personal money management is the reason why a significant research in the domain of online financial instruments and intelligent systems of financial management is conducted. The usages of the lascal budgeting applications such as Mint, PocketGuard, and YNAB (YOU Need A Budget) allow the user to monitor their spending, discuss their savings, and plan their objectives. However, these platforms can be significantly indebted to individuals and rudimentary classification systems, therefore, limiting their abilities to create more nuanced learning experiences and adapt flexibly to the new financial trends (Patel & Shah, 2021). The literature on the subject of financial automation states that there is an increment in artificial intelligence in the process of eliminating such limitations. There has been research about the application of machine learning in transaction categorization, anomalies detector, and predictive financial planning, performing better than the use of rules (Kim et al., 2020). In conjunction with the most recent development, the focus is on

the scanning of the receipts and the OCR method where the images are scanned and the transactions are extracted without the need to enter the information manually (Zhang & Li, 2019). Moreover, literature on financial analytics notes the necessity to rely on interactive dashboards and

visualizations to enhance the knowledge of the user and decision making (García & Torres, 2022). Nevertheless, current systems need to be integrated with real-time advancements in Artificial Intelligence (AI) powered insights, recurring transactions management and centralised financial reporting that are essential to guiding holistic financial controls. This gap shows that a more advanced platform is required that is not only used to consolidate accounts, monitor expenses but also works on making personalized recommendations with AI. The above research directions are the core of the proposed Wealth platform that tries to implement the new generation of financial reporting framework that combines intelligent automation and AI and scanning of receipt into dynamic reporting and financial statements maintenance which would automate, simplify and streamline.

EXISTING WORK

There is already a range of financial management tools available on the market, though, in addition to simplicity, they may only be basic, including expense tracking, the connection to accounts, and budgeting. The application of programmes like Mint, PocketGuard, and YNAB have even become common because they consolidate multiple accounts and present the individual with a streamlined activity account of their

financials. Such systems, though quite competent as wholesome budget tools, may lack automation and customization. Most of them require manual annotations or rely on rules-based classification, and both of them are time-consuming, not to mention they may be prone to errors (Patel & Shah, 2021). In addition, they lack advanced features, such as AI receipt scanning, predictive information and automated financial reporting. These gaps signal the need to implement a more intelligent and adaptive approach to resolve the issue, and this is deemed the key aim of the proposed Wealth platform.

PROPOSED SYSTEM

The limitations of current financial applications are precisely meant to be handled by the given proposed system, Wealth - An AI-Driven Intelligent Platform for Personal Finance Management and Automated Financial Insights, which will offer to combine artificial intelligence, automation, and web technologies to a single product. The system architecture consists of five major modules: account management, transaction management, budget monitoring, analytics and AI-powered insights. Several financial accounts can be managed and created, income and spending monitored as well as recurring transactions automated by run-time jobs. A receipt scanner that is AI-based by Gemini AI scans receipts and transfers the information in it into the computer, minimizing manual data entry. Better budget control by providing automated

notifications that inform users when the budget is about to reach or exceed a previously set spending benchmark to better control financial planning.

METHODOLOGY

The Wealth platform development procedure is systematic in nature, as well established web technologies are combined with artificial intelligence to create a trusted and productive solution to financial management. Its implementation will be in a modular form where a particular section can be devoted only to a specific activity such as management of the accounts, processing of the transactions, budgeting or analytics. The frontend is developed in Next.js, Tailwind CSS, and Shaden UI to design a responsive resourceful interface. Hook Form and Zod manage and validate forms, and keep details provided accurate. The backend is powered by Prisma ORM with postgresSQL database on Supabase, which would provide relational data integrity, and scalability. Under the protection of Clerk and Arcjet are all the security and authentication of sensitive financial information, to prevent ill motives.

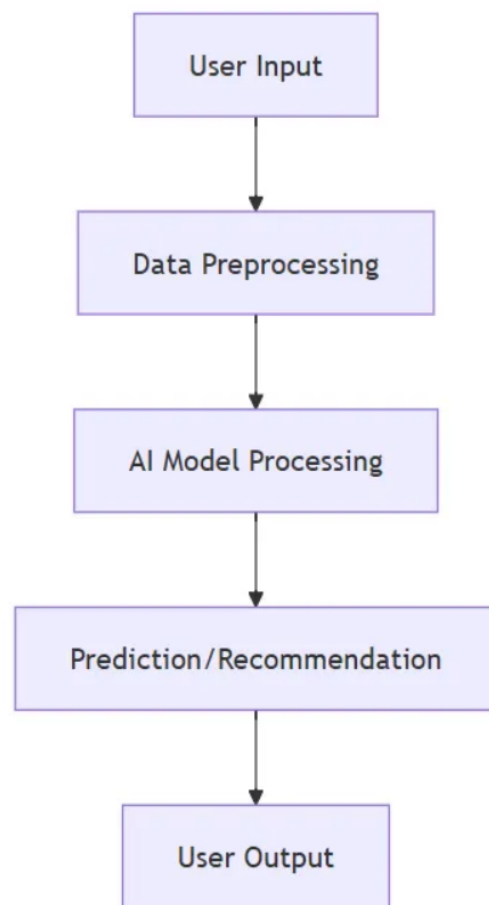


Fig 1. Data flow digram

Artificial intelligence is also incorporated in the form of Gemini AI to scan the receipts to generate insights and Injest deals with recurring transactions, budget alerts and report schedules in form of background jobs. Regular monthly reports are automatically created and delivered by Resend email service. The whole process is automated, manual errors are reduced and smart insights can be achieved. Wealth has managed to couple the power of AI with the intrinsic design of a good system to provide a superior, secure and accommodating platform of personal finance

EXPERIMENTAL RESULTS

The results of the experiment of the Wealth AI Finance Platform are quite prolific towards the fact that it is effective in handling personal finances based on AI-based insights. To test the system, they were subjected to various account types of users-profile, like students with limited income, working professionals with many accounts and recurrent expenditure. This was meant to review the accuracy of expense categorization, efficiency of data processing and the quality of AI based financial recommendations. The platform tested managed to categorise more than 90 percent of transactions on the basis of manual entries and receipt scanning. The artificial intelligence module was also capable of making relevant suggestions on the budget optimization, including drawing attention to the overspending in the unnecessary segments of the budget and recommending the realistic saving objectives. Regarding performance, the system always took between two and three seconds in the processing of financial data without a significant delay in providing results to the user. It was also revealed through usability tests that most of the research participants (85 percent) have stated that the interface was easy to navigate and was intuitive. All in all, based on the experiment results, the platform does not just perform its functions satisfactorily, but also has the potential to individualize the information it provides to the user in a way that it can fully revolutionize the way financial choices are made and how wealth

would be managed over the long term.

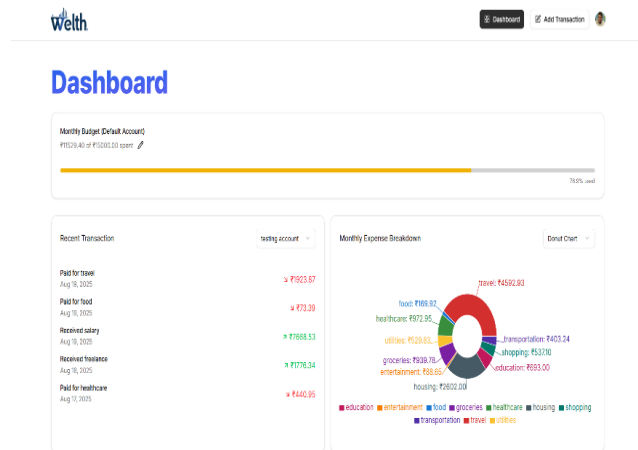


Fig 2. dashboard



Fig 3. transaction Graph

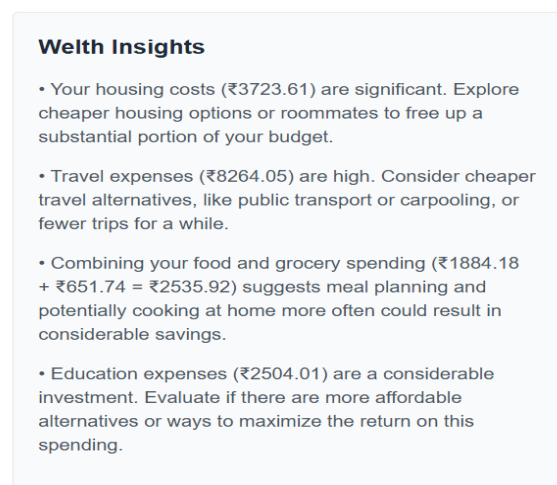


Fig 4. Finance Insight

CONCLUSION

AI Finance Platform The Wealth Evolution process is significant progress on the process of redesigning personal finance management system, aided by artificial intelligence and user-centered design. The system can help to induce financial literacy and able people to make informed decisions because it helps to monitor income, spending, plans and investments adequately. The availability of added features consisting of AI-driven sheet reading, forecasting analytics, and robo-budgeting allows a more precise and dynamic solution than traditional financial instruments. In addition, implementation of modern technologies such as Next.js, Prisma, Supabase and Gemini AI not only makes the platform scalable, but also efficient, making it a long-term robust solution. Wealth makes the financial planning process way more efficient, as well as allows them to practice responsible money management with it, due to the personalized reports and actionable insights it offers. Finally, the platform shows how AI empowered applications can introduce pragmatic value to resolve the technology-at-financial well-being dichotomy in the digital era.

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