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In Collaboration with

UNIVERSITY OF WESTMINSTER

Smart Saver

**A Personalized System for Expense Tracking, Savings Management, and
Financial Insight Recommendation**

A Dissertation by
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ABSTRACT

Personal finance management has been complicated by income instability, increasing cost of living, and extensive financial illiteracy. Existing financial management tools offer limited support to personal predicting and anticipatory decision-making due to their being mostly driven by static monitoring of information and rule-based budgeting. Smart Saver is an intelligent personal financing tool that uses machine learning to provide users predictive insights, target-oriented savings recommendations, and adaptive financial advice. Unlike the existing solutions Smart Saver is different because it uses category-based forecasting models on both income and spending to provide closer predictions that are individually adjusted to personal money behavior. Smart Saver modular architecture integrating data preprocessing, training of models, tracking of user interactions, and feedback loops. Tested by functional and non-functional requirements from accuracy to usability and performance. The research contributes to financial technology by highlighting the potential of machine learning to turn raw money information to empowering and beneficial use to users, and especially those with limited finance planning skills.

Subject Descriptions:

Information Systems → Decision Support Systems → Expert Systems → Personal Finance

Computing Methodologies → Machine Learning → Supervised Learning → Regression Models

Keywords:

Personal finance, financial planning, predictive analytics, expense forecasting, goal-based savings, machine learning, category-specific modeling, supervised learning, behavioral adaptation