

# SmartLife 365: A CRM-Integrated AI Framework for Predictive Preventive Healthcare and Lifestyle Risk Analysis

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**Abstract:** Preventive healthcare has become increasingly important due to the rapid rise in lifestyle-related disorders and unhealthy food consumption habits. Traditional healthcare monitoring systems mainly depend on manual tracking methods and isolated disease prediction models. This review paper presents SmartLife 365, a CRM-integrated artificial intelligence framework designed for predictive preventive healthcare and lifestyle risk analysis. The framework combines machine learning algorithms, nutritional intelligence systems, Microsoft Power Platform technologies, and automation workflows for intelligent healthcare monitoring. The proposed system integrates Open Food Facts API, Microsoft Dataverse, Power Automate, Power BI, and machine learning models such as Random Forest, Decision Tree, Logistic Regression, and XGBoost to generate predictive health-risk analysis and personalized preventive awareness. This paper critically reviews existing research related to predictive healthcare analytics, CRM-based healthcare systems, and AI-driven preventive healthcare technologies. The proposed framework aims to support intelligent automation, real-time risk prediction, and personalized health engagement using low-code technologies and machine learning integration.

**Keywords:** Preventive Healthcare, CRM, Machine Learning, SmartLife 365, Dataverse, Power BI, Lifestyle Analytics, Health Risk Prediction, Power Automate.

## I. INTRODUCTION

Healthcare systems are gradually moving from reactive treatment-based approaches toward preventive and predictive healthcare models. The increasing prevalence of obesity, hypertension, diabetes, cardiovascular disorders, stress-related illnesses, and unhealthy dietary habits has created a demand for intelligent healthcare monitoring systems. Existing healthcare applications mainly focus on calorie counting, isolated disease prediction, or manual health tracking mechanisms.

Recent advancements in artificial intelligence, machine learning, cloud computing, and low-code CRM technologies have opened new opportunities for intelligent healthcare systems. Machine learning algorithms can analyze large-scale health and lifestyle datasets to identify patterns associated with potential health risks. Similarly, Microsoft Power Platform technologies such as Dynamics 365 CRM, Dataverse, Power Automate, and Power BI provide scalable solutions for workflow automation, cloud storage, and data visualization.

This review paper presents SmartLife 365, an AI-driven CRM-integrated healthcare intelligence framework that combines nutritional intelligence systems, predictive analytics, and automated awareness generation for preventive healthcare monitoring.



## **II. LITERATURE REVIEW**

Several researchers have explored predictive healthcare analytics using machine learning and artificial intelligence techniques. Previous studies demonstrated the effectiveness of Random Forest, Decision Tree, Logistic Regression, and XGBoost algorithms in predicting health risks using demographic, behavioral, and clinical datasets.

Research on healthcare CRM systems highlighted the importance of workflow automation, patient engagement, and personalized communication. Studies focusing on Microsoft Power Platform technologies showed that low-code environments can simplify healthcare application development while improving scalability and automation capabilities. Existing food intelligence systems and nutritional analysis applications use food composition databases and APIs to evaluate dietary quality and estimate health risks associated with unhealthy food consumption. However, most existing systems lack integration between predictive machine learning models, CRM-based engagement systems, and automated healthcare awareness workflows.

The reviewed literature indicates that integrating AI, CRM, automation, and nutritional intelligence within a unified healthcare ecosystem remains an emerging research area with significant future scope.

## **III. RESEARCH GAP**

Most traditional healthcare analytics systems focus only on isolated disease prediction models and lack CRM-driven preventive engagement mechanisms. Existing systems generally do not combine machine learning, food intelligence APIs, automation workflows, cloud-based CRM technologies, and personalized awareness generation within a single integrated framework. Furthermore, limited research has explored the use of Microsoft Power Platform technologies for continuous lifestyle risk analysis and preventive healthcare monitoring.

## **IV. PROPOSED SMARTLIFE 365 FRAMEWORK**

The proposed SmartLife 365 framework integrates machine learning, CRM technologies, nutritional intelligence systems, and workflow automation to create an intelligent preventive healthcare ecosystem.

The Data Collection Module retrieves nutritional information from Open Food Facts API and collects lifestyle-related information associated with food consumption patterns. Nutritional attributes such as sugar, sodium, fats, additives, preservatives, and calorie values are extracted automatically.

The Data Storage Module utilizes Microsoft Dataverse for secure cloud-based storage of user profiles, food logs, health-risk information, and preventive awareness records.

The Machine Learning Module performs feature extraction, preprocessing, classification, and predictive analysis using algorithms such as Random Forest, Decision Tree, Logistic Regression, and XGBoost.

The Automation Module uses Power Automate workflows to trigger personalized notifications, preventive awareness alerts, and healthcare recommendations based on predicted risk levels.

The Visualization Module leverages Power BI dashboards to generate interactive reports, consumption trend analysis, health-risk distribution charts, and personalized healthcare insights.

The Integration Module ensures seamless communication between Power Apps, Dataverse, APIs, Azure Machine Learning services, and Power BI visualization systems.

## **V. METHODOLOGY**

The proposed methodology begins with data acquisition from nutritional APIs and healthcare datasets. Data preprocessing techniques are applied to handle missing values, eliminate duplicate records, normalize data attributes, and improve dataset consistency.

Feature engineering techniques are used to identify nutritional and behavioral attributes associated with healthcare risk prediction. Machine learning algorithms are trained using processed healthcare and lifestyle datasets. Random Forest and Decision Tree models are utilized because of their interpretability and ability to identify complex



relationships among healthcare parameters. Logistic Regression supports probabilistic classification, while XGBoost improves predictive performance through gradient boosting mechanisms.

The trained models are integrated with CRM workflows using REST APIs and Microsoft Power Platform technologies. Prediction outputs are stored in Dataverse and utilized for automated preventive healthcare engagement.

#### **VI. ADVANTAGES OF THE PROPOSED SYSTEM**

1. Intelligent preventive healthcare monitoring.
2. Automated awareness generation using CRM workflows.
3. Real-time nutritional analysis and health-risk prediction.
4. Scalable low-code architecture using Microsoft Power Platform.
5. Personalized healthcare recommendations.
6. Interactive data visualization using Power BI dashboards.
7. Reduced manual intervention through workflow automation.
8. Improved healthcare engagement and monitoring.

#### **VII. FUTURE SCOPE**

Future enhancements of SmartLife 365 may include OCR-based food-label scanning, wearable-device synchronization, IoT-based healthcare monitoring, GPS-based lifestyle analytics, and deep-learning approaches such as BERT, Graph Neural Networks, and TabNet. Integration with smart healthcare devices and public-health CRM systems can further improve healthcare intelligence, predictive analytics, and community-level preventive healthcare management.

#### **VIII. CONCLUSION**

This review paper presented SmartLife 365, a CRM-integrated AI framework designed for predictive preventive healthcare and lifestyle risk analysis. The paper reviewed existing healthcare analytics approaches and identified the limitations of traditional healthcare monitoring systems. The proposed framework demonstrates how machine learning, CRM automation, nutritional intelligence systems, and low-code cloud technologies can collaboratively support intelligent preventive healthcare ecosystems. The integration of Microsoft Power Platform technologies with machine learning and predictive analytics provides opportunities for real-time engagement, workflow automation, and personalized preventive healthcare awareness. Future research can further enhance the proposed system using advanced deep-learning models, IoT integration, wearable synchronization, and real-time health analytics.

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