



NutriFit

An AI Based Personalized Diet Recommendation System

Supervised By : Dr Samyan Qayyum Wahla



Problem Statement

Rising health concerns such as obesity and malnutrition highlight the challenges individuals face in finding personalized, balanced dietary solutions. Conventional diet plans often overlook critical factors like nutritional needs, allergies, and lifestyle preferences, resulting in suboptimal health outcomes

Objective

- To develop an Intelligent Personalized Diet Recommendation System that provides smart dietary solutions by analyzing user data such as age, height, weight, allergies, and lifestyle preferences.
- To use machine learning for classifying BMI and recommending personalized meal plans through a content-based filtering approach.
- To ensure system safety by incorporating NLP for allergy detection and adapting to individual caloric and nutritional needs.
- To promote healthier eating habits by offering a user-friendly interface for efficient and accurate dietary guidance.

Project Modules



BMI Class Prediction

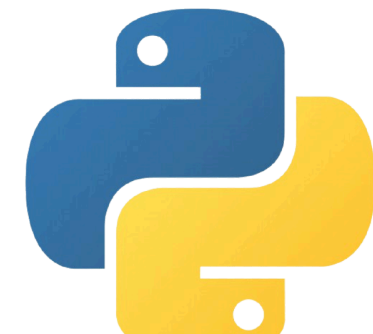


Allergen Detection



Personalized Meal Plan

Technology Stack



Future Work

- Integrate wearable devices for real-time health data to create adaptive plans, expand dietary factors to include health conditions and enhance algorithms with hybrid filtering for accurate recommendations.
- Broaden the food database with global cuisines add exercise plans for holistic health, and offer multilingual support.

Methodology

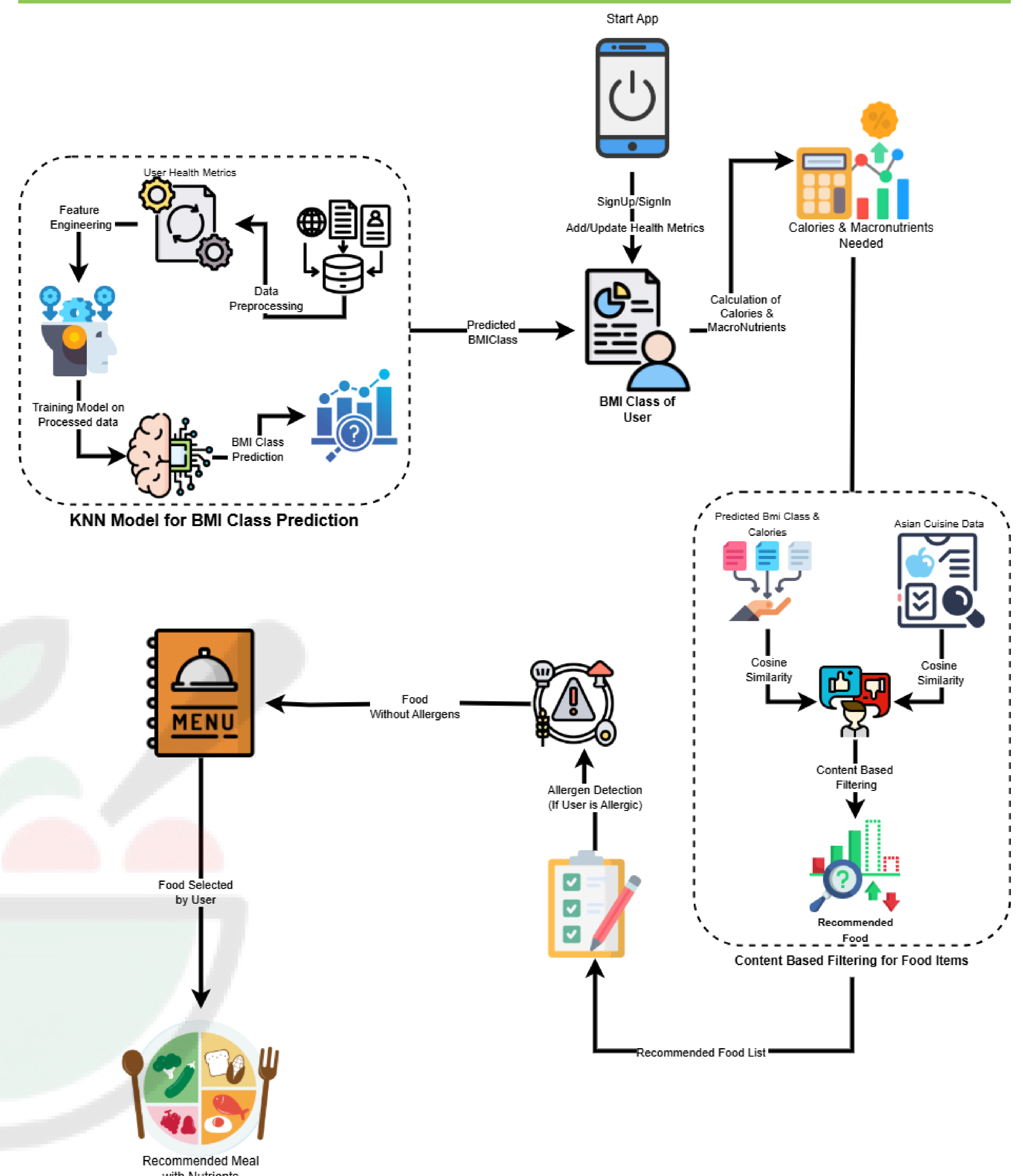


Fig :Methodology Workflow for Personalized Diet Recommendation System

Evaluation and Results

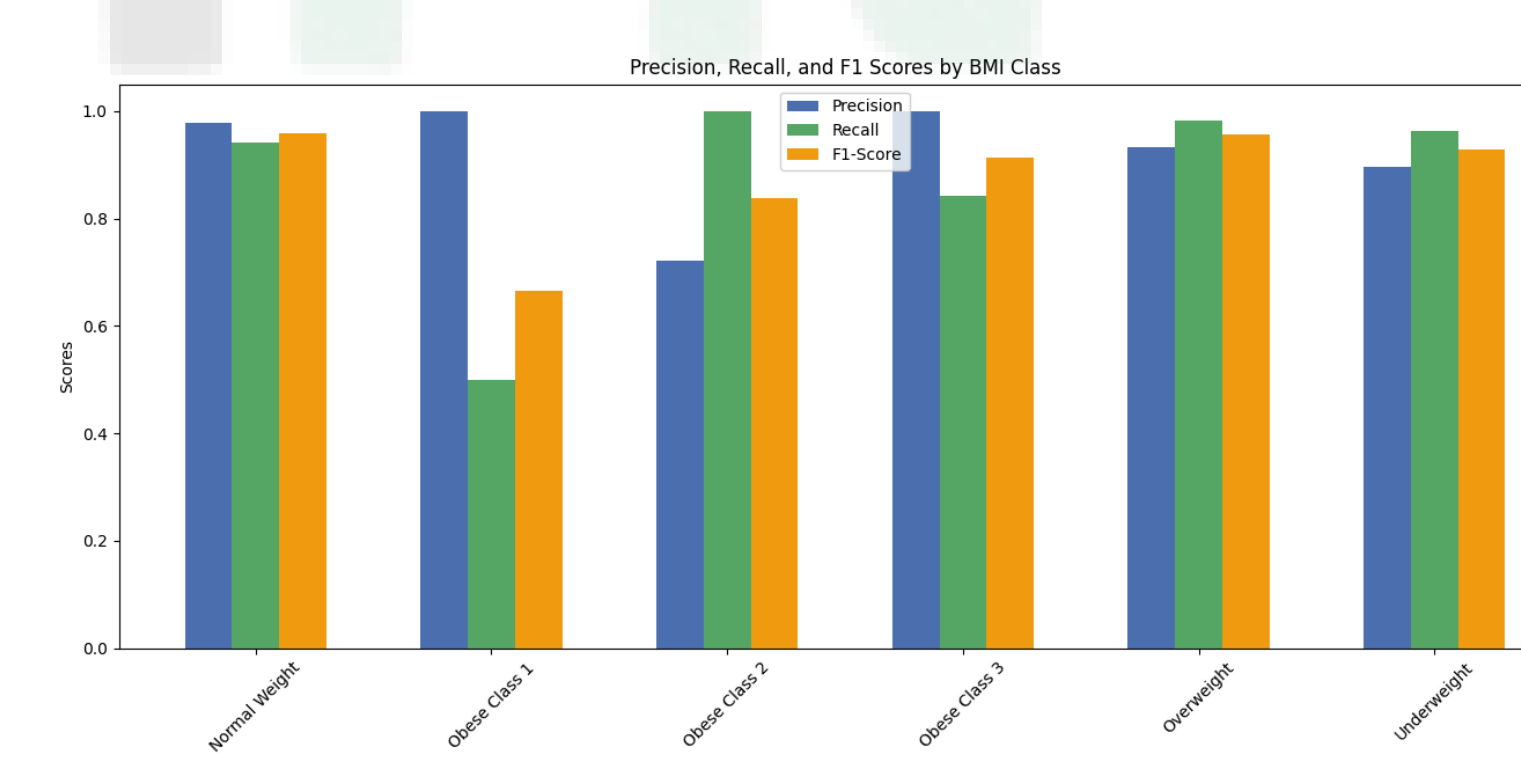


Fig: Precision , Recall and F1 Score of Prediction Fig : Comparison of Detected Allergies and User Input Allergies

Detected Allergies: milk, yogurt, fish, honey
User Input Allergies: honymik, yougurt, fih

SDG Goals



Group Members

Saba Shahdin
Afeera Fatima

2022-CS-112
2022-CS-151



Presented by
Department of Computer Science, University of
Engineering and Technology Lahore