

ABSTRACT

CONTENT-BASED RECOMMENDER SYSTEM FOR ALTERNATIVE FOOD CONTAINING LOWER CALORIE VALUES USING HIERARCHICAL CLUSTERING

Due to a large variety of food available for consumption, people need to realise that maintaining a healthy diet is a good investment for their bodies. Choosing alternative food is one of the ways people can eat what suits their taste while keeping a watch on their calorie intake. On the other hand, identifying preferred alternative food itself is a challenge because of conflicting nutritional needs versus wanting for good food. In this paper, the author proposed a content-based filtering recommender system that can give out lower calorie foods with similar tastes based on its ingredients to help people watch their calorie intakes. The system focuses on food calories, its ingredients, and the user's food choices. Using Python machine learning library scikit-learn, the food data will be categorized through hierarchical clustering to get a group of similar food items and then filtered to achieve a proper order of recommendation. The experimentation result of 10 food choices written in a survey and tested by 32 respondents showed that the recommender system succeeded based on the overall assessment index reaching 71,3% which indicates a satisfactory response. However, the accuracy of the system needs to be improved because the given recommendation order data didn't suit the respondents' choices, with improvement centering on additional data as to the shape, category, and main ingredient of the food.

Keywords: recommender system, content-based filtering, alternative food, hierarchical clustering