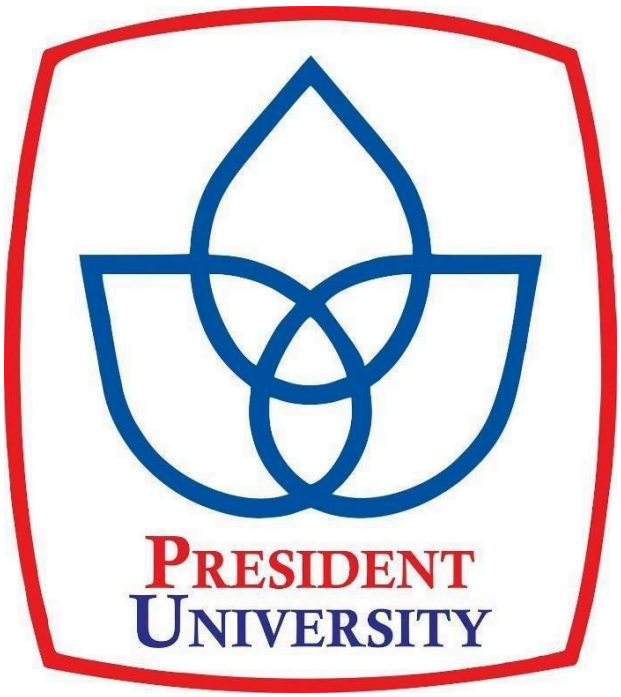
AI-Powered Recipe Recommendation



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2024

CHAPTER I
INTRODUCTION

1.1 Background

The culinary world is a rapidly changing one, with recipes moving from one generation to the next. With technology, it has become easier accessing many recipes but harder knowing which ones are desired and appropriate. This problem can be solved by artificial intelligence (AI)-powered recipe recommendation that suggests recipes based on user preferences and available ingredients.

AI-powered solutions arose out of a need to handle matters faster and efficiently as well as personalizing recipes. Just by analyzing user information like preferred styles or types of foods, AI is able to predict meals according to specific needs. However, there are many pre-existing AI-driven food applications that do not allow extensive customization.

Advanced machine learning techniques will be used in the AI-Powered Recipe Recommendation so as to resolve this predicament; hence enabling individualized recipe suggestions that change depending on users' preferences and requirements leading to an uninterrupted enjoyable cooking experience.

1.2 Problem Statement

A. Doing manual search like using a book can be stressful and time consuming.
B. When we see current recipes, platforms typically do not offer personalized recommendations.
C. When we try Search on internet maybe we can find what recipes we want but but that's not always what we're really looking for

1.3 Objectives

Developing Personalized Recipe Recommendations, make a system that recommends recipes based on individual user preferences and available ingredients and Design it simple and user-friendly interface for making it easy for users to navigate and discover recipes.

1.4 Scope and Limitations

The AI-Powered Recipe Recommendation its engine by customized recipe ideas according to the user's preferences and the ingredients they have handy for cooking. However, only trained Data will be used in the system and this might not include all types of dishes or recipes that are possible. Also, the recommendations' depend on the quality and completeness of data entered by the user.

1.5 Project methodology

A. Planning and Design:
- Define main goals and objectives for recipe recommendation.
- Design scalable and efficient system architecture to handle recipe data and user interactions.

B. Technology Selection:
- Research and choose the most suitable programming languages, databases, and AI/ML frameworks.
- Evaluate options like Python, Flask, TensorFlow,

C. Development:
- Front-end: Develop a Simple interface using suitable programming languages
- Back-end: Implementing the server-side logic using Python with Flask for handling user requests and interfacing with the AI model.

D. Testing:
- testing for each individual component (front-end, back-end, AI model).
- Integration testing to ensure seamless communication between different components.
- User acceptance testing with a diverse set of users to evaluate the recommendation quality and user experience.

E. Deployment and Implementation:
- Deploy the AI-Powered Recipe Recommendation on a suitable hosting platform (cloud or on-premises).
- monitoring the performance, gathering user feedback, and planning for future updates and improvements.