

## **SMARTCOOK: INTELLIGENT RECIPE MATCHING WITH PHOTO-BASED INGREDIENT RECOGNITION**

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### **ABSTRACT**

The SmartCook: Intelligent Recipe Matching with Photo-Based Ingredient Recognition project is a major step toward building a robust and intelligent system. This phase is dedicated to backend development, API integration, and implementing TensorFlow for advanced image recognition. Using Django as the backend framework and PostgreSQL for data storage, the focus will be on secure user authentication, efficient data management, and smooth server-side functionality. APIs will facilitate smooth communication between the front-end and back-end, enabling key features such as ingredient input, recipe retrieval, and personalized suggestions. TensorFlow will be utilized to develop a photo based ingredient recognition system, training models on labeled datasets to accurately detect ingredients from uploaded images. The backend will process these detections, match them with stored recipes, and generate customized recommendations for users. Rigorous unit and integration tests will ensure the reliability and performance of the backend. With of continuous monitoring and performance tracking will be the foundation of an intelligent, smooth, and friendly SmartCook platform.