Dietise

Team Overview

We are three current Master of Computer Science students at University of California, Irvine. We formed a team to create an application that we felt had the potential to improve the experiences people have with cooking and food. We all have an interest in AI, Software Development and food and we wanted to make a product to share our passion with others.

OUR TEAM

Eric Cai (eacai@uci.edu):
Backend AI and Database Developer. Created two noSQL databases in MongoDB and Firebase Firestore. Used Python to create scripts that cleaned and managed the data for the databases. Used Python's Keras API to make a Food Image Classification Model transfer learned on MobileNet V2.

Matt Bilello (mlbilell@uci.edu):
Front-end iOS React Developer. Built cross-platform application with focus on the iOS native application. Learned Javascript along with React/React Native frameworks in order to implement the front-end application. Features include user sign-up, user sign-in, API calls to Firebase for recipe/user data in the database, camera use for taking pictures, displaying information, navigating between screens smoothly, and hook variables to save state locally and globally.

Zhenyuan Gao (zhenyug1@uci.edu):
Front-end Andriod React Developer. Utilize React Native FIrebase API to fetch data, add data and delete data if necessary.
Created the UI for android. Integrated multiple functionalities including camera, ML model integration, Firebase recipe display with the help of useContext, useState, hook variables and other libraries.

Problem:
A positive side effect of the current global pandemic, is that an increasing number of people are finding joy in cooking meals. With the increased interest in cooking, people are looking for better ways to find recipes. However, how can we find a recipe for a delicious-looking dish when we don't know what the dish is?

Solution:
Our product uses a novel AI food image classification model to identify dishes from a picture taken by the user and recommends appropriate recipes.

Product Overview:
Our product is a recipe recommendation application. Aside from the regular ability to search recipes by name, we use a novel AI food image classification model to identify dishes and recommend recipes. Our prototype has the ability to predict 121 different dishes from food images. These 121 dishes cover 11 notable dishes from 11 cuisines. Our database of recipes holds over 100,000 different recipes from various recipe datasets on a wide variety of foods. Users will be able to search for recipes using text input or get a prediction from our model to receive recipes. We also allow premium users to enter diet information and get filtered recipes that fit their dietary preferences. Our product is catered to people that are looking for a convenient solution to finding recipes for delicious dishes that are unknown. Our target market is millennials and younger consumer population.

Development:
We started at the planning phase and consulted with our advisors about the feasibility of our project. We then developed and trained our food image classification model and built our recipe and user databases. The development of the application followed a parallel development between the Android and iOS versions. At the current stage, we can identify 121 unique dishes and have over 100,000 recipes that our customers can search through. We plan to improve our model and increase the number of identifiable dishes to over 700 dishes and allow customizable dietary restriction in a future release.

Target Market:
There is an increasing interest in food and cooking the in the millennial population. We believe that our product can be easily integrated into the 'Instagram Food' and 'Food Porn' ideas that are prevalent in the millennial and younger consumer population.

Competitors:
Though there are many recipe websites and databases that are available, there are very few publicly available AI recipe recommendation products. Our product is unique in that it identifies the dish in the picture rather than the ingredients used. We believe that we do not have any direct competitors at the current time.

Business Model:
We will offer our product for free download on the iOS App Store/ Android Play Store and but limit the number the searches in a certain time frame. If the user wants to search more recipes, they can unlock them by watching ads. We will also add unintrusive ads to the login page and main page of the app. They can also upgrade to a paid premium option to have unlimited searches and no ads. The premium option also comes with the feature to filter searches based on their dietary preferences or diet. The premium option is available after a one-time payment of $20.00.