RESEARCH ARTICLE

Cooking Papa: An Online Application Helps Removing the Barrier Between Modern Generation and Cooking

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Abstract: The COVID-19 pandemic has led to an increased interest in home-cooked meals as people have had more time for themselves and their families. Cooking at home is considered safer and has resulted in a significant rise in the number of people preparing their own food. Only 7.0 percent cooked less frequently during the lockdown, while 42.0 percent cooked more frequently. Women were particularly affected by this trend. More time was spent on meal preparation, trying new recipes, and baking among those who cooked more often. The consumption of comfort foods like sweets and salty snacks has seen a notable increase, with a significant percentage of respondents reporting increased snacking. Unfortunately, this change in eating habits, combined with reduced physical activity, has raised concerns about weight gain. To address the growing interest in home cooking and the need for new recipes and balanced meals, the idea for a cooking app called "Cooking Papa" has been proposed. This app aims to simplify home-cooked meals by providing clear instructions and encouraging users to explore new dishes in its database. The definition of cooking varies among individuals, and terms like homemade, convenience, proper cooking, cook, basic ingredients, and ready prepared are not universally understood. Cooking is seen as a complex concept, influenced by factors like heat, fresh ingredients, and convenience meals. While convenience foods are popular, scratch cooking is highly valued. Lack of time and cost are major obstacles, and effective meal planning and organization are essential. Disruptive events like the pandemic can change people's perspectives on cooking. Most individuals tend to remain in their current state, with some shifting towards more positive or negative views on shopping and cooking. Those most impacted by the pandemic are at a higher risk of transitioning between states. Overall, the pandemic has prompted some individuals to rediscover their love for home cooking and home-cooked meals.

Keywords: flutter, videos, images, artificial intelligence, machine learning recipes, open computer vision

1. Introduction

As the distance between countries shrinks thanks to social media, the opportunity to engage with different cultures in areas such as fashion and religion grows dramatically. Throughout the epidemic, it is apparent that the number of culinary channels, as well as the number of people viewing them, has expanded dramatically, and people are genuinely learning new recipes from those videos. However, because users would have to view all of the films, it will take a significant amount of time for them to write down all of the recipes that are available online. Not to mention, they are seeking a certain sort of cooking recipe that works with their present ingredients. Many culinary applications were developed and got popular in our culture in order to save time and energy. Before this app was built, there were numerous concepts, and each of them may have followed different patterns as well as algorithms to optimize the possibility of discovering the ideal recipes for each individual user. The program Bon Vivant (Ghaswala et al., 2018) is one example of artificial intelligence in action. They highlight the changes in how the app operates

between the present system and their proposal system in their work, as seen in Table 1.

In their app, the user first selects their preferred ingredient, after which the algorithm generates a selection of recipes and a graphical depiction. The user may then map items to cuisine, which will emerge depending on the app's database. Furthermore, users may select from the available alternatives depending on their interests, as well as flavor and nutrition. The user may also create and upload their own recipes for other users to attempt in the future in order to increase the data in the database.

During the ideation process, we noticed that this proposition is in high demand but has not yet been thoroughly developed. Cooking applications, in contrast to other elements relating to computer algorithms or design, do not appear to be receiving much attention. It is simple to discover culinary applications on any platform, but people do not learn from them; instead, they learn through online lessons on platforms such as YouTube, Facebook, and Instagram. Users appear to be doubting the validity of the applications as well as the recipes that are supplied. The cooking channels are gaining increased attention as a result of Covid-19, as consumers are ready to spend more time cooking at home rather than buying prepackaged food. As a result, culinary apps will be a terrific resource since the user can just open an app on their phone and put in what sort of

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Table 1
**Existing system vs. proposed system (Ghaswala et al., 2018)**

Existing system	Proposed system
The existing system does not integrate the concept of flavor pairing while the proposed system is an interactive platform that allows users to discover flavor pairings based on flavor compound analysis	Integrate the concept of flavor pairing
Recipe apps like all recipes dinner spinner suggest recipes based on the rating and comments	Bon Vivant takes into preference as well as nutritional requirements to suggest recipes
The existing systems do not provide a replacement for the ingredient while the proposed system provides does	Provide a replacement for the ingredient if something is unavailable
The existing system uses keywords of the recipe name to search for recipes	Proposed system uses clustering to divide which recipes are similar to each other; compound and flavor networks are convincing

Figure 1
Processing flow (Maruyama et al., 2012)

Step 1: Point a camera to food ingredients

Step 2: Recognize food ingredients and them store them in order

Step 3: Search an online recipe database

Figure 2
Processing flow (Maruyama et al., 2012)

Step 4: Display a menu list

Step 5: Select one by touching

Step 6: Show a cooking recipe

cuisine they want, and all of the materials, as well as the procedures to create, will display within a minute. Not to mention that this software will aid in the promotion of other nations' cultures. The only thing users need to do is launching this cookery software to experience the culture of different places by trying out other cultures' food. Last but not least, the concept of creating a culinary app is for those who do not have the time to learn. People rely too much on fast food because they do not have enough time to prepare a healthy meal or learn how to make the foods they like. Cooking a decent dinner is important in Asian culture, particularly in Vietnam, because it is the only time when the entire family can spend time together and inquire about their day. On major occasions such as Thanksgiving and Christmas in America, it is clear that everyone prefers home-cooked meals to packaged food. Therefore, learning how to cook is necessary and this cooking app will shorten the time as well as the energy compared to a normal cooking class.
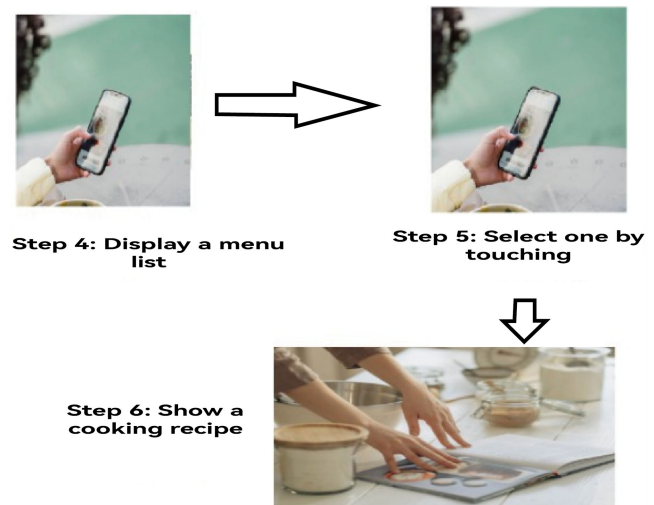
2. Related Work

Furthermore, for a long time, the notion of establishing a culinary app has been offered, and each of them follows a different strategy and employs different technology to connect with the user. According to Maruyama et al. (2012), their system is developed for the user during their grocery shop trip, and by pointing the ingredients with a smartphone camera, the user will receive a list of recipes immediately acquired from the database. They outline the flow of how their system should function in Figures 1 and 2 (Maruyama et al., 2012). The first step is for the user to direct their camera toward the ingredients. In the background, the system will continually capture frame photos from the camera device. In step 2, the app will continually recognize those food elements in the obtained frame photos. The top six candidates will be shown on the upper-right side of the mobile device's screen. In step 3, conduct an internet cooking search for the name of the detected food ingredient will be used as a search keyword in recipe databases to generate a menu list. If a user want to look for recipes connected to candidates other than the top one, the user can do so by tapping the screen and
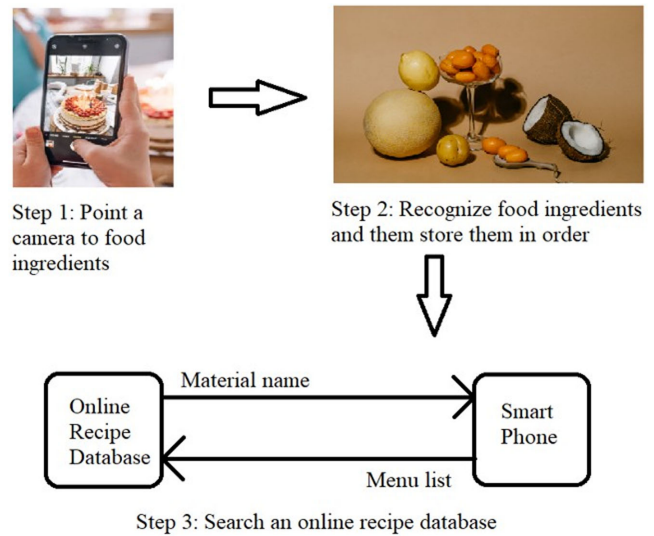
selecting one of the top six ingredients as shown in Figure 3. In step 4, the software will display the acquired menu list on the left side. The users will then select a dish from the menu, and they will be able to see different recipes by scrolling down. In the last stage, the system will show the relevant cooking recipe, including a list of required ingredients and spices, as well as a cooking method, on the popup window for the selected menu. Furthermore, the result is that for 30 kinds of food ingredients, the proposed system has achieved the 83.93% classification rate within the top six candidates.

Furthermore, Yajima & Kobayashi (2009) take a distinct approach to the user. In their paper, they also mention other studies of recipe recommendation for the users such as Tsuji et al. (2008) applied fuzzy mathematical programming to create a menu taking into account the amount of food consumed, or Karikome & Fuji (2008) suggest a way to suggest a meal with excellent nutrition balance taking into account the food components. Additionally, the

Figure 3
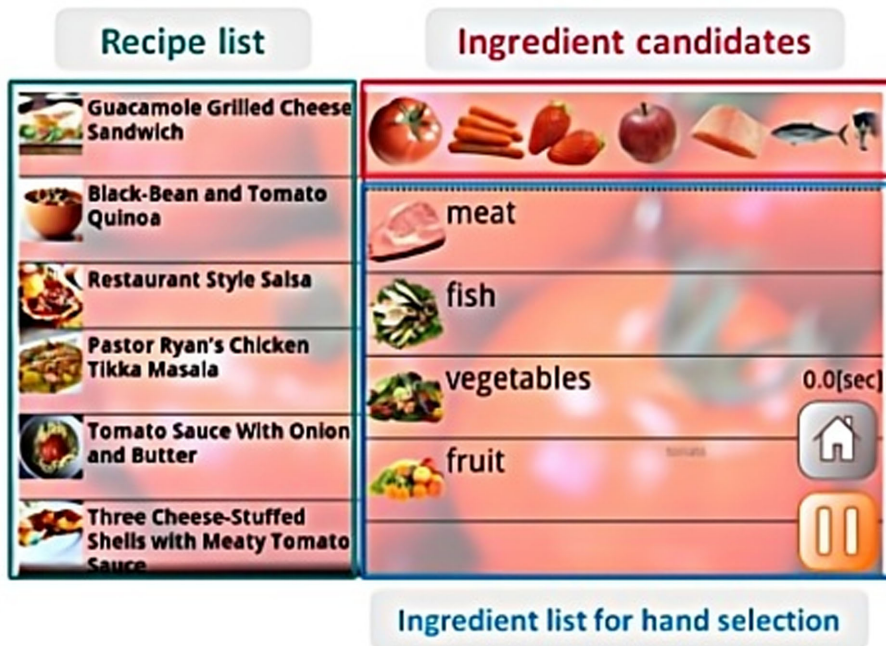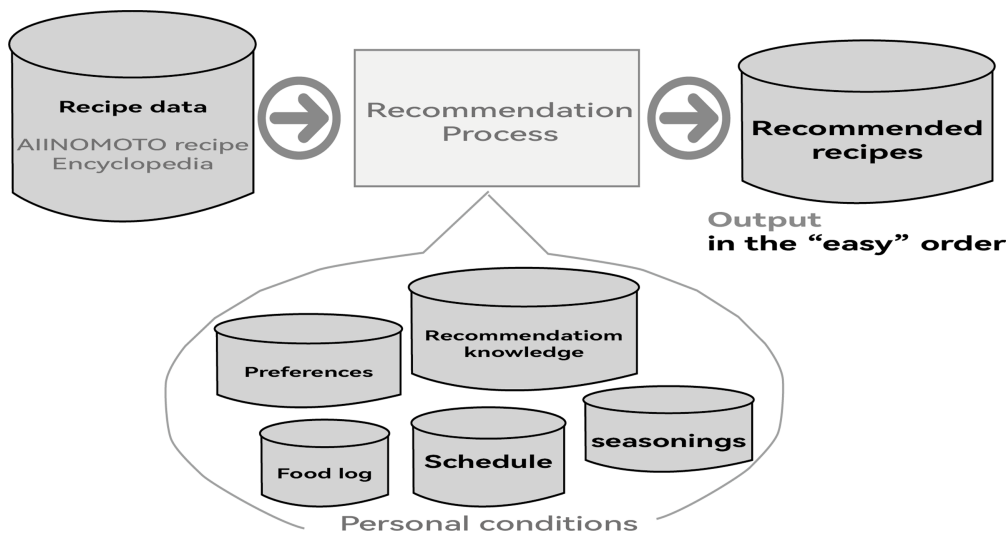**The system screen (Maruyama et al., 2012)**

Figure 4
Overview of recommendation (Yajima & Kobayashi, 2009)

work in Ueda et al. (2008) created a recipe recommendation system in which the system will observe the frequency of the ingredients used in the recipe from the user history and then reflect it to the user's preference and recommend recipes taking the user's preference into consideration. Instead of advising recipes based on ingredients, they built recipes for clients based on the following information: recipe name, seasonings, items used in the recipe, calories of dishes, cooking time, dish category, major cooking method, and eating seasons. The database can be extracted from the Ajinomoto recipe encyclopedia. Figure 4 shows how the app uses the database to generate recipes based on the personal conditions. When a user initially starts the app, the system gathers information about the situation and displays it in a specific format: date and time, user's

schedule for the day, food consumed the day before, and suggestion target. Step 2 involves the user entering a query based on a hunch about a target recipe. Following these five methods, the app will produce output for the recipes in step 3. To begin, based on the three aspects (Yajima & Kobayashi, 2009), a user's knowledge can be registered for the purpose of recommending recipes by themselves. If it is winter, for example, the food that cooks in the summer would not be included. By including this type of information, the number of recipes with a low chance of getting chosen will be reduced. Then there is the information gleaned from the browser log. During operation, the system will learn from the user's cooking method, food categories, and other patterns of interest by observing their interest patterns. Last but not least, the

user's ingredient preferences. The system basically recalls and emphasizes the important ingredients that are regularly used by the users. With this information, the app will generate meals that include those ingredients. Second, the system combines the additional query created in step 1 with the initial query created in step 2 to retrieve the recipes from the database. For instance, in some cases where the user does not offer all of the required information, the system would automatically add more to make a better query in order to provide recipes that satisfy the users. Finally, if users do not offer any information, the app will construct a recipe based on two criteria: the cooking time must be less than 60 minutes, and the top 30 ingredients that users frequently use. Fourth, the recipes are listed in order of how easy they are to prepare. Finally, such recipes are displayed together with the rationale behind the recommendation. After completing step 3, the users select a recipe in step 4, and the guidelines appear. As previously stated, whenever users use the app, the system collects their browsing history and stores it in a knowledge base tailored to their interests.

Furthermore, once the user has completed their dishes, they can rate the difficulty level on a scale of easy, average, and challenging. Finally, people can add recipes to their food records based on their preferences.

2.1. Work on Kochbar.de

In this study, they conduct a large-scale analysis of 200l users posting over 400k recipes in an online platform called Kochbar.de. One of the main ideas behind this study was that the online recipe uploaded is considered very useful in the current world. This study tried to understand the trends set by the users and community to be able to design recommending algorithms or intelligent user interfaces. Their study showed that there are a variety of signals and features that explains a particular trend in the app. These were based on social networks, temporal context, and geographical embeddings. The study showed that 95% of the users use the same ingredients as their friends and that 7% of people who are friends upload the same type of food to the platform. They also found that, on average only 22% of the ingredients in a recipe can be explained if the food is known. Overall, this research helped to understand online food behavior much more deeply (Trattner et al., 2019).

2.2. Work on food recipe app

In this research, they present an Android application that searches different types of food recipes based on various categories. They present a list of recipes based on the ingredients, prep times, cook time, serving size, and ready time. The researchers have used Firebase's real-time database, could host, could storage-like functionality to achieve the database for the app. To code the entire app, they used Android Studio. In Android Studio, Java Programming language was used along with XML. In this app, the users were allowed to add and find food recipes using intuitive application features. They concluded with the idea that they would want to be able to add a moderation system and user system in the app in upcoming updates. Overall, the idea of a simple food recipe app was accomplished (Motalebi, 2018).

3. Experimental Setup

Cooking Papa is built for both IOS and Android operation system; therefore, programming languages – Java and Swift – need

for this project. For IOS system, XCode is a toolchain that preimplement Swift language, which has built-in stimulator from Iphone 6 to the newest Iphone. For Android system, Java software development kit (SDK) need to be downloaded and compatible with computer's figures. With installed Java SDK, Android Studio can run based on that SDK. Android Studio has built-in android stimulator and is supported by Google with Pixel Phone. Flutter Framework can be used in any editor for both Mac OS and Window OS. Among thousands of editor, Visual Studio Code stand out the most with built-in extensions to help developer to code effectively. Back end connects OpenCV and Google Vision to recognize ingredient that user have through the picture user upload from the app. Then front end get the data back from the back end and display the right data for the user.

4. Framework

Flutter is a UI SDK created by Google (Dagne, 2019). By using Flutter, developers can build cross-platform applications for Android and iOS from a single codebase. In March 2021, Google released Flutter 2 with major updates, including the official support for web apps and desktop application support for Windows, macOS, and Linux. Typically, when building an app for mobile devices, we will need a team of Android developers specializing in Java or Kotlin and another team of iOS developers who are experts in Objective-C or Swift in order to deliver two native versions for each platform. Now, with Flutter, a lot of human resources would be saved since we only need one team of developers working on one single codebase (Dagne, 2019). The reduced workload also equals cost reduction and difficult-to-beat time-to-market length. Thus, this is the major reason our team decided to choose Flutter to be the front end framework for "Cooking Papa." Due to the small team's size (only four developers), we believe Flutter SDK is the best solution which will make our idea quickly available on the two most popular mobile OSes. In addition to cross-platform support, Flutter has many other advantages that help app development faster and more convenient. One of the greatest features of Flutter I want to talk about is Hot Reload, which allows developers to make changes to the codebase and see them immediately reflected on the app. In native app development, whenever some code changes are made, we must rebuild the app and reinstall it on the testing devices. This is such a time-wasting process that every mobile developer has gone through in their work; they have no ways to avoid it. This process could even be more lengthy depending on the developers' computer systems, especially the old or not-so-powerful ones. Thanks to the Hot Reload feature, we can test our newly added code, fix bugs without having to rebuild and restart the application, which will save us lots of time during development. Another key feature of this Google-made SDK is its sets of widgets that make Flutter apps look identical to native apps and behave naturally on both OSes (Dagne, 2019). Flutter contains two sets of widgets specifically created for each platform: Material Design, which has the same name as the design language for Android; and Curpetino, which mimics the design of iOS. The SDK also has its own set of custom widgets, which is a great tool for creative developers who want to create unique looks for their applications. Furthermore, Flutter apps will look good and the same on every OS version, from the older to the latest one. This means that developers never have to worry about supporting older devices.

OpenCV (Open Source Computer Vision Library). OpenCV is a free and open-source library for computer vision and machine learning that is primarily designed for real-time vision applications (Naveenkumar & Vadivel, 2015). More than 2500 efficient algorithms are included in the

library, which may be used to track camera motions, identify objects, detect and recognize faces, identify faces, track moving objects, etc. As real-time ingredient recognition utilizing a smartphone's camera is Cooking Papa's core feature, OpenCV will be essential to the development of our software. Because Python is the greatest language for machine learning, our team also decided to adopt it as the primary language for back-end development. After being properly taught, our system will use OpenCV to assist users in quickly, accurately, and comfortably identifying substances.

5. Results

First, we expect that our application will give users the most suitable recipes based on the ingredients provided or at least offer them the recipes which include up to 80% of the ingredients. For instance, if the user has potato, beef, and tomato, then we can expect "Cooking Papa" to provide the recipes which have exactly those ingredients or at least two out of the three above.

Second, step-by-step instructions with simple words and sentences will be given to users so that they can easily understand and follow. It is expected that all users who are above 16 and never cook before would be able to fully understand and remember what they are doing. Sometimes, people might find it difficult learning to cook a new dish just because the recipes might include some of the cooking terms. They simply get confused and do not know what to do. This cooking app will guide them through each step with clear instructions. As you can see in Figure 5, the app will capture the ingredients in the image and then come up with a list of suitable recipes as shown in Table 2.

Lastly, as we mentioned above, people are experiencing other cultures through food and learning about them through the ingredients in their recipes. For that particular reason, our team hope that this app could be a stronger bridge between cultures. If you search for, for example, how to make ramen by using the search bar as shown in Figure 6, you will find a lot of different recipes of many variants of ramen with different instructions on how to do it. People will get confused and wonder which one they should try in order to have the best or authentic taste. Our data for the cooking app might not be exactly the same as the traditional ways but we rely on the review about the recipes and then choosing the best one to put in the database. Our team want "Cooking Papa" to be reliable so that people can be proud of their cooking skills. We expect that our users will have a good time while using the app. Our team are also paying attention to the user experience and we want the app to be as simple as possible so that they know where to find the answers to their questions.

Culinary is art, and art is subjective. A recipe that is appealing to one might not be attractive at all to another. Meanwhile, one of "Cooking Papa's" goal is that everyone is interested in the majority of the recipes suggested to them. The task for "Cooking Papa" becomes "From the universe of recipes available, for each individual user, pick the top few recipes that they would like the most." Recommender system becomes the perfect solution to the task above. A recommender system, which "produces individualized recommendations as output or has the effect of guiding the user in a personalized way to interesting or useful objects in a large space of possible options" (Burke, 2012), is capable of producing different output per user, as well as handling an enormous amount of data.

There are two most common approaches for a recommender system, namely collaborative filtering and content-based filtering. There are also a third one called knowledge-based filtering (Burke, 2000), but it is not very applicable to "Cooking Papa."

Figure 5
The system recognizes the name of the ingredient
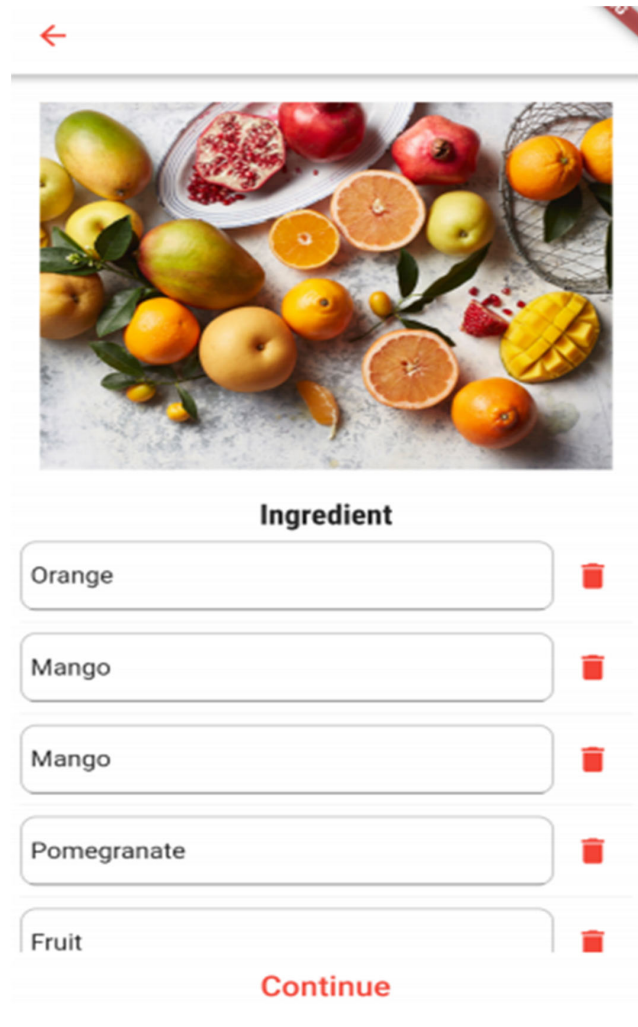
Collaborative filtering is the approach that produces recommendation based on interactions between users and items. Meanwhile, in content-based filtering, the systems try to guess the nature of the users and then assign some kind of tag to that user. For instance, if I have a tendency to interact with Japanese recipe, the systems will keep recommending me new Japanese recipe.

From the quick explanation above, advantages and drawbacks of each type of recommender system can be seen quite clearly. Collaborative filtering suffers when the data set is sparse (Ekstrand et al., 2011). Content-based approach can be used to fix this, since it only relies on the characteristic of users and items. However, content-based filtering has some of its own problem. First, many topics online are only interesting for a short period of time (Van Meteren & Van Someren, 2000). The recommender system has to constantly change if we only adopt this approach. Second, content-based filtering only recommend items in a certain criteria; therefore, it is not really suitable with "Cooking Papa's" goal to support globalization of cuisine. A hybrid recommender of both approach can be applied to solve the drawback of each filtering. In fact, it has been proved that hybrid recommender outperforms individual algorithm (Ekstrand et al., 2011). With the nature of the product, "Cooking Papa" will rely

Table 2
Tasks and results

Tasks	Milestones and deliverable
Task 1: Retrieve image from camera and recognize the ingredients	Expected: All ingredients are identified and displayed to the user Actual: Some of the background are sometimes identified (such as plates, silver wares). There are few error, if none at all, in reading the actual ingredient. Spice is usually mistakenly identified, but it is not in the scope of Cooking Papa
Task 2: Suggest recipes based on the ingredients	Expected: Recipes will be recommended if all ingredients the user currently has are listed under the recipe's main ingredient Actual: Recipes are suggested with high accuracy, sorted and filtered by different cuisine. However, if the ingredients provided are insufficient, the suggestion might contain some ingredients that the user does not own

Figure 6
Recommendation list for the recipes

mostly on collaborative filtering, but content-based filtering will be taken into account.

Computer Vision is one field of artificial intelligence that analyzes images, videos, and translate them into meaningful outputs for humans or other programs to use. Converting an image to some text describing what it is has been a concern since the early days of computers, as soon as late 1960s and early 1970s (Kakani et al., 2020), and it remains imperfect until today. Szeliski explains that the problem of computer vision is an inverse problem, "in which we seek to recover some unknowns given insufficient information to fully specify solution" (Szeliski, 2010). He further insist that the dream of having a computer being capable of realizing images as a 2-year-old child level is still elusive (Szeliski, 2010). However, AI scientists have been achieving many important milestones in computer vision, including our topic of food and recipes, thanks to the wide variety of data available on the Internet. Since 2020, the amount of data created yearly is estimated to be 44 trillion gigabytes (Batista & Marques, 2017), which is a huge potential for AI to be trained upon. As a result, the Fourth Industrial Revolution (usually refer to as the age of 4.0) observes a giant leap in AI, Computer Vision, and Big Data (Younus, 2017), bring our most advanced AI closer to the ability of performing at human level. Since 2010, computer vision was finalized to perform high-end task such as object recognition, robot navigation, and autonomous vehicle (Vedaldi & Fulkerson, 2010). IBM also successfully created an AI that is able to suggest/innovate recipes by looking at the ingredient (Pinel, 2015), which becomes one of the inspirations for Cooking Papa.

As the app finished, we managed to complete an online application called Cooking Papa. First, when the users open the app, they will see a sign-in surface in which the users can log in if they already have an account or register for one if they do not. The user's information is stored in the database (Firebase Authentication). Then users can search for the recipes based on the ingredient they would like by entering the ingredient in the search bar or letting the app scan the ingredients. After that, a list of the recipe will be recommended for the user to choose based on the ingredients from the user and the category that the user chooses. If users choose a recipe, they will be given a list of ingredients have for that ingredient and the step-by-step instruction. On this screen, the user can choose to put it in their favor or not. If they decide to add the recipe to their favorite list, we will add the recipe information to Firebase Real-Time Database.

5. Discussion

We are living in the world where every tasks can be done through a smart phone and it seems that the traditional method for cooking lessons as well as advertising is not working effectively anymore.

As the author mention in article (Motalebi, 2018), in the article, Tania Lewis presents the idea of "digital food". The article by Lewis provides a comprehensive review of the growing overlaps between the digital and food worlds, including everything from consumer sharing of food photographs on social media to watching of YouTube "how to" videos to the effects of connection on alternative food movements and agribusiness. Users do not have to obtain recipes from the internet or other platforms such as YouTube or Instagram since the major function of our cooking app is to assist people discover the best suited dish based on their specified components. Furthermore, while searching on the internet, it will offer a plethora of recipes, and it is up to the customers to select the greatest suit for them. As a result, our cooking software not only decreases the amount of time people need to spend searching for the perfect recipe, but it also enhances the amount of time people can spend focusing on making a tasty dinner. Last but not least, with the online application for cooking, user can easily control how much nutrient they consume in a meal. Ueta et al. (2011) offer a recipe-analysis tool that can detect the components and the amount of each ingredient in any dish. These data were used to determine the quantity of a nutrient in a meal. This result was coupled with the co-occurrence database to determine which dishes would best address the user's health condition and the result is their system can generally identify a formula with the required nutrition to address the health condition.

Moreover, fast food is harmful, according to several studies, and can contribute to obesity, diabetes, and other health problems. This issue has long been discussed in our culture, and most people are aware that eating fast food regularly is harmful to our health in the long term. However, most individuals still choose fast food over making fresh meals because they do not know how to cook or believe that cooking would spend too much of their free time in their hectic life. We recognize these typical concerns, so we created this culinary software to address them. Each competent cook may write a recipe in their own language in a variety of ways. Some people can create easy recipes, but they miss some stages, which might make it difficult for a new chef to take up their recipe. Some recipes include detailed descriptions with comprehensive explanations for each step, which might be tedious for some seasoned cooks. To avoid this problem, our culinary software would employ carefully selected recipes to provide users with the greatest possible experience. In order to progressively form the habit of preparing healthy meals at home and start down the path to a better life, people do not need to be afraid of cooking. Surgenor et al. (2017) conduct an experiment in an effort to show the significant impact of learning to cook via video technology. They are looking for candidates who fit the following criteria: Women who prepare for their families and think they are bad cooks, according to the study Surgenor 2017 Impact. Participants in the experiment will receive cooking directions for a homemade lasagne based on one of four scenarios as listed in Table 3.

As shown in Table 3, participants in condition 1 (the control group) were given a recipe card with an image like a classic cookbook. For condition 2, the author modified the recipe to include video modeling, in which participants saw a full demonstration of the meal being cooked on a tablet before beginning the culinary activity. This state is analogous to watching television and learning from it. In addition, video prompting was introduced to condition 3, so that participants may see step-by-step instructions in a guided sequence while preparing the food. Last but not least, in condition 4, the participants were shown the recipe card and video elements and told that they

Table 3
Experimental content and measures (Surgenor et al., 2017)

Condition	Content	Measures
1	Control	Recipe card only
2	Video modeling	Full video demonstration and recipe card
3	Video prompting	Step-by-step skills video and recipe card (view the full sequence of skills)
4	Video prompting	Step-by-step video and recipe card (view skills as needed)

may watch the video clips whenever they wanted. The concept for this illness is based on the contemporary use of internet media such as YouTube snippets, which allow whole videos or portions of them to be seen or repeated. The findings revealed four themes: (1) enhanced knowledge of the cooking process, (2) real-time reassurance in the cooking process, (3) support in the acquisition of new culinary abilities, and (4) increasing enjoyment of the cooking process (Surgenor et al., 2017). The combined use of audiovisual information helped increase participants' knowledge of each stage of the cooking process across conditions 2–4, according to the results for number (1) improved comprehension of the cooking process. Meanwhile, respondents in condition 1 discussed their ability to imagine the ultimate result, in this case, lasagne, but failed to visualize various processes and stages inside the recipe (bechamel sauce). The video technology that helped participants' learning process was emphasized for number (2) real-time reassurance in the cooking process outcomes from conditions 2–4.

Furthermore, respondents highlighted their understanding of how the consistency of the bechamel sauce should seem once produced. Still, they were unsure of what the viscosity should be throughout the phases of the sauce-making process, notably in condition 3. Nonetheless, the results of condition 3 showed that the step-by-step sequencing minimized the need for participants to recall components of the recipe since they watched the video in real time. This real time allowed them to work at their own pace, pausing and restarting the movie as needed. Participants in condition 4 said they relied on the video to refer back to certain phases of the procedure to ensure that they followed the process correctly. The ability to choose which stages to see as and when needed, as often as needed, resulted in participants tailoring the video to their requirements. Furthermore, in the findings, for number (3) aiding in the acquisition of new culinary abilities, it was noted that the usefulness of video to accomplish new cooking skills was discovered across all situations. Furthermore, the participants debated its utility in developing more technical culinary abilities. Across all four scenarios, each participant identifies video technology at its best when: (1) learning or applying a new cooking skill and (2) reinforcing a more advanced technical competence. Most participants in condition 2 preferred to follow recipe text rather than video instruction since they had prior expertise cooking a bolognese sauce and hence did not find this aspect of the film useful. Individuals thought that seeing the demonstration before starting the experiment helped them anticipate that certain stages of the cooking process were being completed correctly. Condition 3 participants thought the abilities presented in the film made it easier for them to imitate throughout

the experiment. Furthermore, condition 4 results revealed that most participants experienced with producing the bolognese sauce did not select to observe the steps relevant to this stage in the process. In this trial, the majority of participants considered sauce-making to be a new skill. When the flour was added to the oil and cooked, several participants admitted that they would have thrown away the sauce if the videos had not been accessible. The findings for number four, enhancing the enjoyment of the cooking process, showed that participants in each condition addressed their reluctance to cook from scratch because of related fear, lack of confidence, reported lack of ability (lack of awareness), and lack of experience (Surgenor et al., 2017). Although the majority of participants stated that their enjoyment of the culinary activity and their satisfaction in their ability to duplicate the recipe was more essential, it appears that their lack of confidence prohibited them from cooking with fresh products. Most respondents highlighted how they avoided advanced or difficult skill sets to stick to what was known and comfortable. Not to mention that learning from the film boosted participants' self-efficacy and enjoyment of the cooking process across all settings. The reported results of condition 1 suggested that the text-only recipe did enable the participants to construct an end product; however, individuals who had not previously experienced this procedure voiced doubt and expressed worries about specific technical components of the recipe. "Cooking Papa" not only encourages users to learn about a different culture, but it also connects people via cuisine. Food is one of the most fundamental commodities in our life; thus, it is certainly the topic everyone in a conversation is familiar with.

Food may be the focal point of any activity that brings people together and improves human contact, from preparation to consumption. What could be better than a large family gathering around the holidays, where you cook food and enjoy it together? Can you conceive of a celebration, gathering, or pleasant encounter that did not take place over a magnificent dining table? Without question, food is at the heart of many human social activities. On the other hand, choosing what to make for dinner is never a simple chore. The cook must examine several factors, like what ingredients they have and require, what nutrition the items include when the family was last fed these meals, and so on. Depending on each home, one may be overwhelmed by the number of available alternatives, and the other may not have any.

If you cannot decide, "Cooking Papa" can recommend a proper meal or assist you in locating a suitable recipe if your selections are restricted. The program will save you significant time, allowing you to spend more time connecting with your family or friends, thus improving the quality of human relationships around you. Furthermore, eating not only physically brings people together, but it also emotionally binds them together. Indeed, smelling, cooking, touching, and tasting meals elicit emotional reactions, which etch themselves considerably deeper into one's memory than any other form of experience. To illustrate my argument, imagine you smell a familiar scent that quickly transports you back to your childhood. Another example unrelated to food but demonstrates how vividly a person remembers a scent or flavor is the hospital smell, which reminds you of the time you were unwell. With the scent, our recipe guarantees, "Cooking Papa" assures that your time spent with your loved ones is both bountiful and unforgettable.

Conflicts of Interest

The authors declare that they have no conflicts of interest to this work.

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