

Project: Generate Recipe from Food Image

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INTRODUCTION

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In the world of culinary arts, where precision and technique often reign supreme, there exists a captivating yet elusive skill known as cooking by sight. Unlike traditional cooking methods that rely heavily on precise measurements and meticulous instructions, **Cooking by Sight** embraces intuition, experience, and a keen understanding of ingredients and flavors.

Imagine a seasoned chef effortlessly crafting a gourmet meal, effortlessly adjusting seasoning, and achieving perfect caramelization without ever consulting a recipe book or measuring spoon. This is the essence of cooking by sight - a culinary journey guided by instinct, honed over years of practice, where the kitchen becomes a canvas and the cook, an artist.

In this project, we delve into the fascinating world of cooking by sight, exploring its origins, principles, and techniques. We uncover the secrets behind mastering this art form, from understanding the fundamentals of flavor profiles to developing a keen eye for visual cues such as color, texture, and doneness.

Join us as we embark on a sensory adventure, where taste, smell, and sight converge to create culinary masterpieces beyond measure. Whether you're a seasoned chef or an aspiring home cook, discover how cooking by sight can elevate your culinary repertoire and ignite a passion for creativity in the kitchen. Welcome to the realm of cooking by sight, where every dish tells a story, and every meal is a masterpiece waiting to be crafted.



ABOUT THE PROJECT

"Generate Recipe from Food Image" AKA "Cooking by Sight" project is an exciting venture into the realm of computer vision and artificial intelligence applied to culinary arts. Here's an overview of what such a project typically involves:

<u>Image Recognition</u>: The project begins with training a deep learning model to recognize various food items from images. This involves using convolutional neural networks (CNNs) to analyze visual features and identify ingredients, dishes, and cooking methods depicted in the images.

<u>Ingredient Analysis</u>: Once the food items are recognized, the next step is to extract information about the ingredients. This may involve parsing the image to identify different components, such as vegetables, proteins, spices, and condiments.

<u>Recipe Generation</u>: Based on the identified ingredients and their quantities, a recipe generation algorithm is employed. This algorithm may utilize a database of recipes or generate new ones based on common cooking practices and flavor combinations.

<u>Cooking Instructions</u>: The generated recipe is accompanied by cooking instructions, which may include steps such as chopping vegetables, marinating meats, cooking times, and temperature settings.

<u>User Interaction</u>: The project can be enhanced by incorporating user interaction features. For example, users may be able to upload their food images, receive generated recipes, customize ingredients or dietary preferences, and provide feedback on the suggested recipes.

Evaluation and Refinement: Continuous evaluation and refinement of the model and algorithms are crucial to improving the accuracy and relevance of the generated recipes. This may involve collecting user feedback, updating the training data, and fine-tuning the model's parameters

The technologies and programming languages we've utilized



Python



Streamlit



Machine Learning



Next.JS



Tailwind CSS



Deep Learning



HOW OUR MODEL WORKS

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80+ Dataset

Unlock the culinary possibilities with our cutting-edge Al-powered recipe generation service, fueled by a robust database of over 80+ South Asian Recipe datasets.

Let our Model Generate Recipes for you

Experience the future of cooking with our 'Let Model Generate Recipes for You' service. Sit back, relax, and enjoy personalized recipes tailored to your tastes, making meal planning effortless and enjoyable.

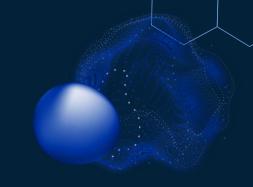
Upload your Image

Elevate your dining experience with our seamless 'Upload Your Image' feature. Simply snap a photo of your culinary creation, and let our Model do the rest

Get your Recipe

Access your personalized culinary masterpiece crafted by our model with every piece of information received. Say goodbye to recipe hunting and hello to culinary excellence—start cooking your dreams today!

OUR DATASET







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We possess an extensive dataset comprising over 80 food recipes from across South Asia.

REQUIREMENT ANALYSIS

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FUNCTIONAL REQUIREMENT
NON-FUNCTIONAL REQUIREMENT



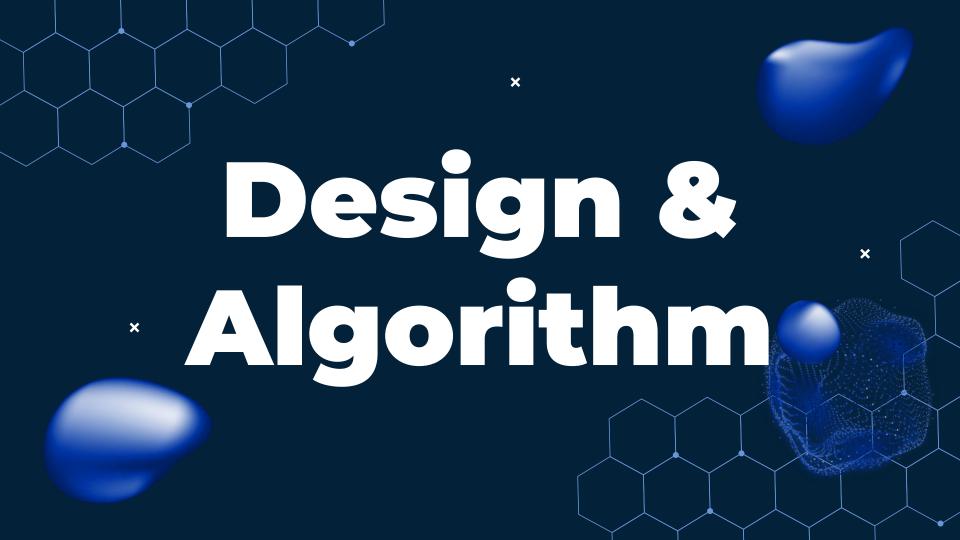


FUNCTIONAL REQUIREMENTS

- 1. User Interface Design: The frontend should provide an intuitive and visually appealing interface for users to interact with. UI components should be designed using React to ensure modularity and reusability. Tailwind CSS should be used for styling UI elements to maintain consistency and responsiveness across different devices and screen sizes.
- **2. Image Upload:** Users should be able to upload images of food items seamlessly using the frontend interface. Upload functionality should be implemented using appropriate React components and event handling.
- **3. Interaction with Backend:** The frontend should communicate with the backend to send image data for processing and receive recipe details. API requests should be made asynchronously using libraries like Axios to ensure smooth interaction without blocking the UI.
- **4. Dynamic Content Rendering:** Upon receiving recipe details from the backend, the frontend should dynamically render the information on the UI. React state management techniques should be employed to update UI components in response to changes in data.
- **5. Navigation:** The frontend should facilitate easy navigation between different sections/pages, such as the home page and the prediction page. Next.js routing capabilities should be utilized to manage client-side navigation effectively.

NON-FUNCTIONAL REQUIREMENTS

- 1. Performance: The frontend should be optimized for performance to ensure fast loading times and smooth user experience. Minification and bundling techniques should be applied to reduce the size of JavaScript and CSS files. Caching mechanisms should be implemented where applicable to minimize redundant data fetching.
- **2. Scalability:** Frontend components and architecture should be designed to scale seamlessly as the application grows in complexity and user base. Next.js SSR (Server-Side Rendering) capabilities can be leveraged to improve scalability and SEO performance.
- **3. Responsiveness:** The frontend should be responsive and adapt gracefully to different screen sizes and resolutions. Tailwind CSS utility classes should be used to create responsive layouts and components.
- **4. Accessibility:** The frontend should adhere to accessibility standards to ensure that users with disabilities can use the application effectively. Semantic HTML elements should be used appropriately also can be employed to enhance accessibility.
- **5. Browser Compatibility:** The frontend should be tested across different browsers to ensure consistent behavior and appearance. Compatibility with modern browsers as well as older versions should be verified.
- **6. Code Maintainability:** Frontend code should be well-organized, modular, and maintainable to facilitate future updates and enhancements. Code conventions and best practices should be followed to improve readability and ease of maintenance.
- **7. Documentation:** Frontend & Backend code should be accompanied by comprehensive documentation explaining component usage, props, and API interactions. Installation instructions and setup guidelines is available in GitHub repository.



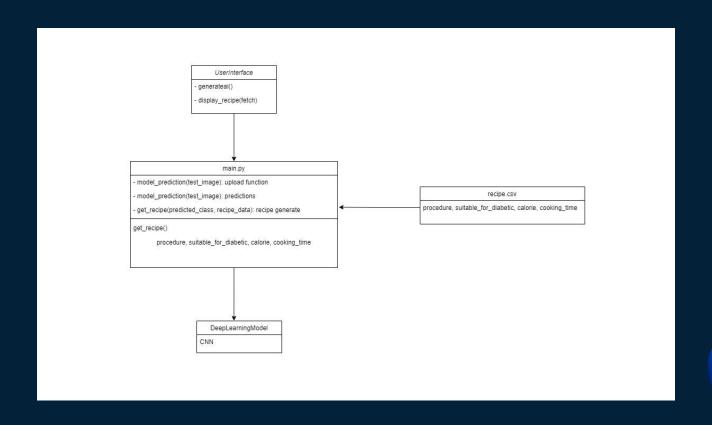


A Smoth and Responsive UI/UX

A Smooth and Responsive UI/UX that incorporates React, Next.js, and Tailwind CSS enhances user engagement and elevates the overall experience of Model.

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Program Algorithm



CONCLUSION

"Cooking by Sight" revolutionizes recipe discovery by leveraging cutting-edge Deep Learning. Users simply upload a food image, and our system identifies the ingredients and generates a detailed recipe, all presented in a user-friendly interface. With technologies like TensorFlow, React, Next.js, and Tailwind CSS, we've crafted a seamless experience that empowers users to cook with confidence, even when they're unsure of a dish's name or ingredients. Whether you're a seasoned chef or a novice in the kitchen, "Cooking by Sight" opens up a world of culinary possibilities at your fingertips.

Code Repository: https://github.com/md-hameem/generate-recipie-using-food-image/ **Figma Design:** https://github.com/md-hameem/generate-recipie-using-food-image/ **Figma Design:** https://www.figma.com/design/9stF4H1jvgtbOuzfE90VxQ/Cooking-By-Sight?node-id=5%3A7&t=zvFvI7BOI84uxbT8-1



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THANKS!

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DO YOU HAVE ANY QUESTIONS?

