

GROUP 5  
CARNIVALE

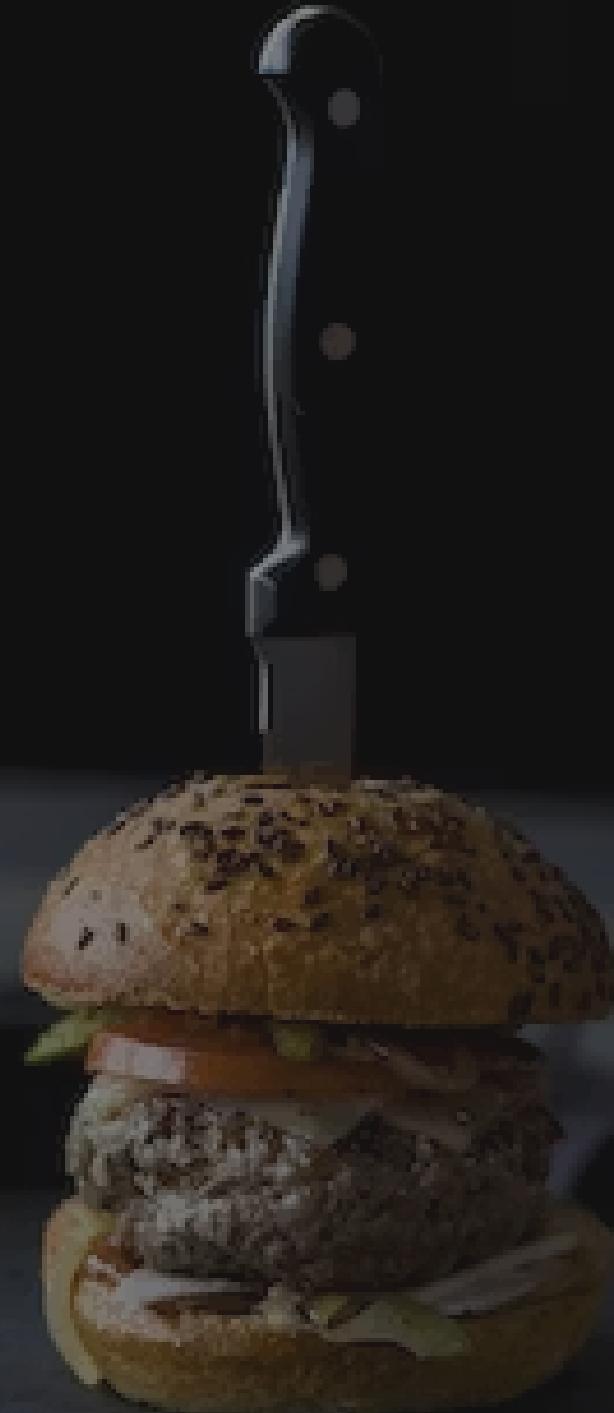
# SAFEPLATE

A MOBILE APPLICATION FOR  
PERSONALIZED ALLERGEN-  
FREE RECIPE  
RECOMMENDATIONS OF  
PHILIPPINE FOOD UTILIZING  
RANDOM FOREST ALGORITHM

PRESENTED BY  
COLESIO - GACER - MADRIGAL

# BACKGROUND OF THE STUDY

Food allergy is a response by the immune system to certain foods that it identifies as harmful. When someone with a food allergy consumes a particular food, their immune system recognizes specific proteins in that food as dangerous substances and launches an attack against them. This immune response can lead to a range of symptoms, which can vary from mild to severe, and potentially life-threatening.



# "SAFEPLATE"

The project "SafePlate: Personalized Allergen-Free Recipe Recommendations" aims to develop a recommender system that is user-friendly and suggests dishes based on a user's dietary preferences, accessible ingredients, and nutritional needs. Users may also input their allergies in the system, which ensures that any recipes that include certain allergens are eliminated from the suggestions and that acceptable substitutes are offered. Other features such as filtering and sorting types of cuisine can be added to the system.



# OBJECTIVES OF THE STUDY

- To help individuals spend less time on thinking what food to make in the remaining ingredients
- To identify allergies and provide them alternate ingredients that will avoid the given allergen while keeping the quality of the food
- To implement an application that is capable of getting a user input and providing an accurate output.
- To provide accurate dishes that can be made using the ingredients provided.

# SIGNIFICANCE OF THE STUDY

- Parents or Caregivers - Those caring for individuals with food allergies, especially children, can have peace of mind. It can help them to come up with a diverse range of meals without risking allergen exposure.
- Dietitians and Nutritionists - These professionals can use this system as a tool to help clients with food allergies to build diverse and nutritionally balanced meal plans.

# SIGNIFICANCE OF THE STUDY

- Future Programmers and Data Scientists – This project can serve as a valuable case study for aspiring programmers, data scientists, and software engineers. It provides a real-world example of how artificial intelligence, machine learning, and data processing can be used to solve everyday problems and improve people's lives. Those interested in specializing in health tech, personalization algorithms, or recommendation systems could particularly benefit from studying this project.



# SCOPE & DELIMITATIONS

# SCOPE .....

- Focus on providing allergen-free meals or recipes to system users.
- Aim to raise awareness about food allergies and guide people in their food decision process.
- Target audience includes people with allergies to the products presented in the system, as well as the general population.
- Proposed method involves offering personalized recipe recommendations through a mobile application.
- Identify characteristics of users and recipes important for tailored recommendations.
- Factors influencing food choice will be explored to optimize recipe recommendations.

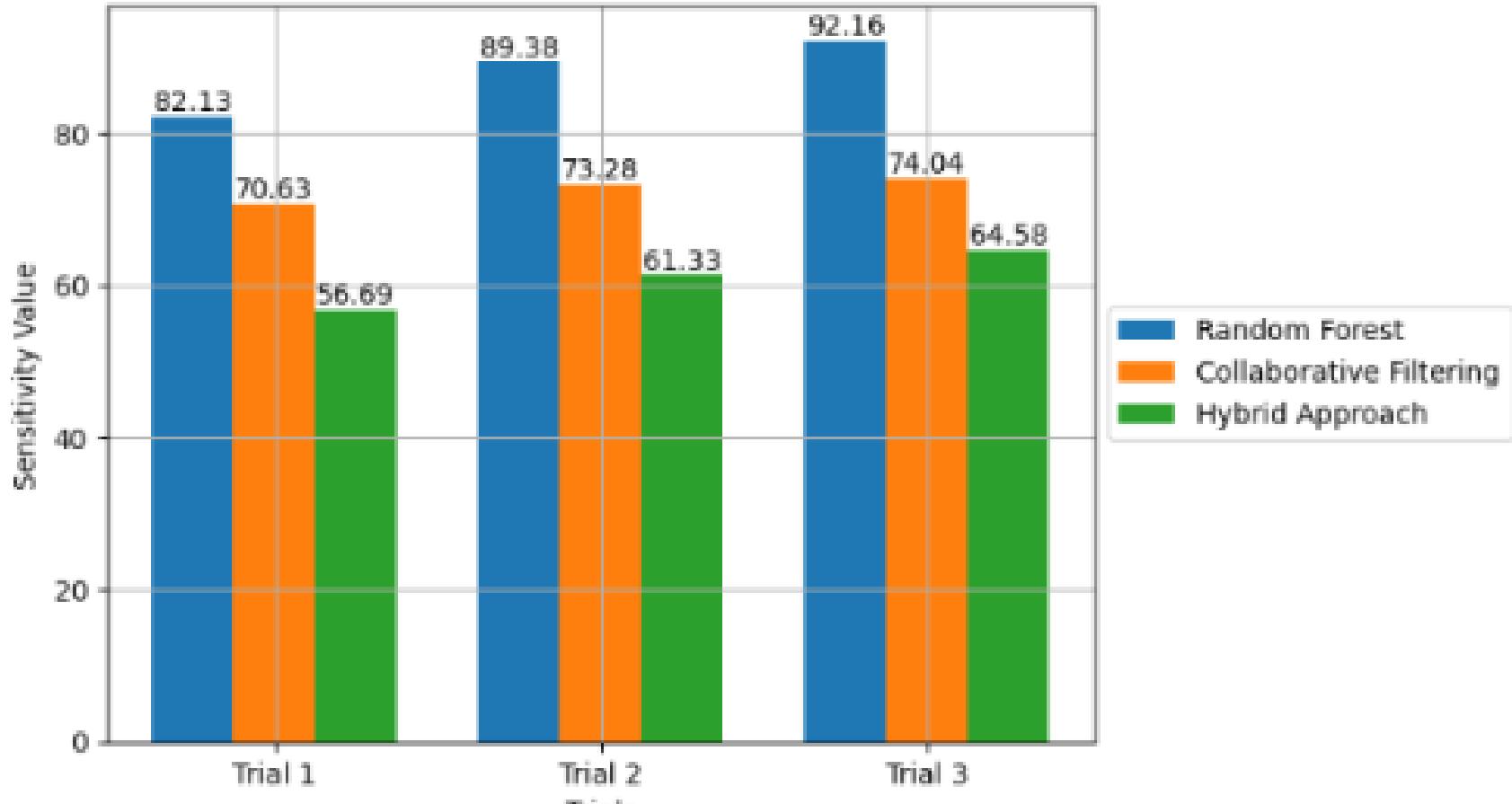
# DELIMITATIONS-----

- Participants were not required to actually prepare the dishes or consider their available ingredients.
- The emphasis of participants' responses may have been more on liking the dish rather than practical barriers to preparation, potentially affecting frequency estimations.
- Certain individuals with specific dietary restrictions or medical conditions (e.g., diabetes, high blood pressure) may not be included in the system.
- The system is currently limited to nine major allergens and may not account for other specific allergens.

# SENSITIVITY ANALYSIS

Sensitivity Analysis Combination	Random Forest	Collaborative Filtering	Hybrid Approach
Trial 1	82.13	70.63	56.69
Trial 2	89.38	73.28	61.33
Trial 3	92.16	74.04	64.58

## Sensitivity Analysis



# PROJECT DEMO

----- BY COLESIO -----

# MEET THE OUTSTANDING TEAM



REDD GACER



DANILO  
MADRIGAL



JOSEPH  
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THANK YOU  
FOR YOUR  
TIME!