

The background is decorated with various hand-drawn food items in a sketchy style. In the top left, there are two tomatoes on a yellow background. In the top center, a bunch of green beans is tied together. In the top right, there is a whole green pepper and a slice of citrus fruit. On the left side, there is a whole avocado. In the bottom left, there is a green bell pepper. In the bottom center, there is a slice of citrus fruit, a small chili pepper, and a whole chili pepper. In the bottom right, there is a whole chili pepper, a slice of citrus fruit, and a whole chili pepper. The text 'ByteBITES' is centered in the middle of the image.

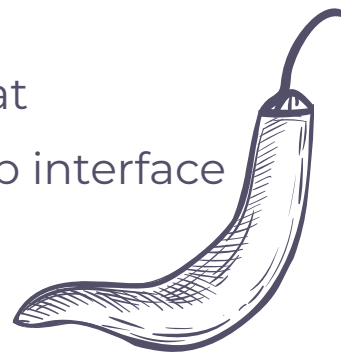
# ByteBITES

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# ByteBITEs

Generating **nutritious, personalized** recipes that  
best **utilize user ingredients** through a user-friendly web interface





# 01

## Problem Statement

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## Target Audience



**44%**

of Americans meal prep regularly

**26.9%**

of Americans meal prep to save time

**22.2%**

of Americans meal prep to eat healthier



[MyProtein Americans Meal Prepping Habits 2022 Study](#)

# Current cooking resources overlook user needs

allrecipes

Find a recipe or ingredient

DINNERS MEALS INGREDIENTS OCCASIONS CUISINES KITCHEN TIPS NEWS FEATURES

Advertisement

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Jamie Oliver



## Braised Beef

★★★★★ 4.9 (10) | 9 REVIEWS | 2 PHOTOS

An elevated version of homestyle pot roast, this braised beef is hearty and full of earthy richness. It would pair well with mashed potatoes, buttery noodles, or crusty bread.

By [Nicole McLaughlin](#) | Updated on July 27, 2023

Save

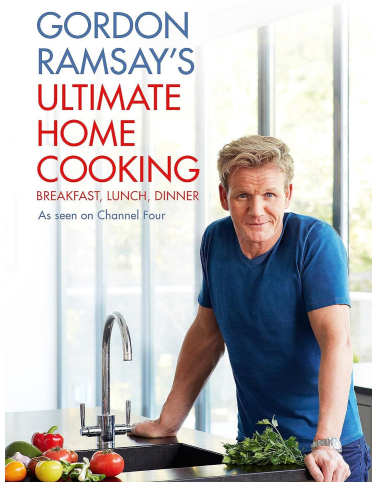
Rate

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Share



GORDON  
RAMSAY'S  
ULTIMATE  
HOME  
COOKING  
BREAKFAST, LUNCH, DINNER  
As seen on Channel Four



inconvenient, time consuming  
Little to no nutritional information





an Average American spends

**\$1300**

on food that end up being unused / discarded

[William & Mary 2020 food waste study](#)

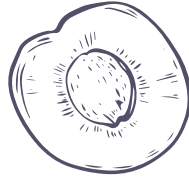


# Problems that ByteBITEs addresses



## Convenience

Our user can conveniently generate recipes with our user-friendly web app.



## Nutrition

Recipes generated by ByteBites provide detailed nutritional facts to users.



## Waste

ByteBites generates recipes that optimally utilize ingredients that the user has bought from their grocery store runs.

# Target Audience



College Students



Early Career  
Individuals

- Looking for efficient, nutritious ways to prep meals
- Looking to optimally utilize ingredients to save costs
- High acceptance for AI-based applications





02

Unique  
Value  
Proposition

# Our Uniqueness

01

## Automated Ingredient Recognition

Use OCR model to identify ingredients from receipt

02

## Personalized Meal Planning

Dietary restrictions, time constraints & meal types

03

## Health and Wellness integration

Monitor nutrients intake and provide insights on user's diet

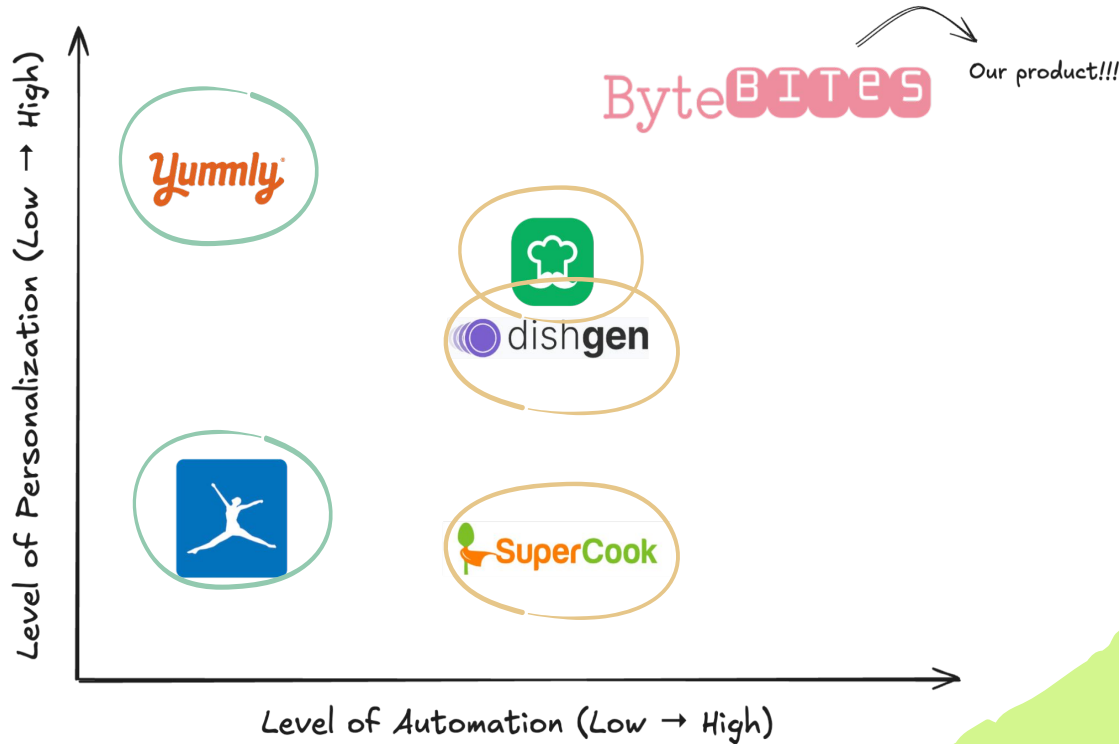
04

## User-Driven Recipe Refinement

Incorporate user ratings with RLHF to improve recipe recommendation



# Competitive Position



03



Bytebites Demo



# O4

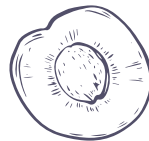
## Scalability and Efficiency

# Model & Optimization



## Data

We use recipe data from food.com containing **180K recipes** and **700K reviews**, reflecting 18 years of user interactions and uploads.



## Model

We finetune **facebook-opt-125m** model on the recipe dataset and we plan to use the **Llama3-8B** model in our final application.

**Fine-tuning**



Task specific

**PEFT  
(LoRA)**



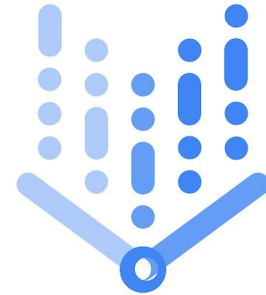
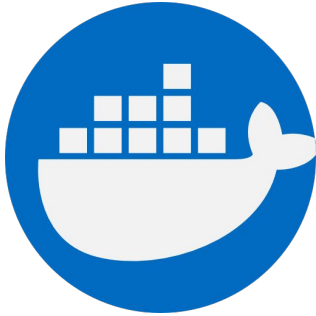
Efficient Training

**RLHF**



Tailored for user

# Infrastructure Considerations



05

Future Development  
& Growth Potential





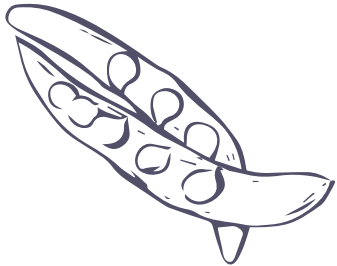
# Future Development Roadmap

## Personalization

Improve recipe suggestions based on individual tastes, dietary restrictions, and past behavior

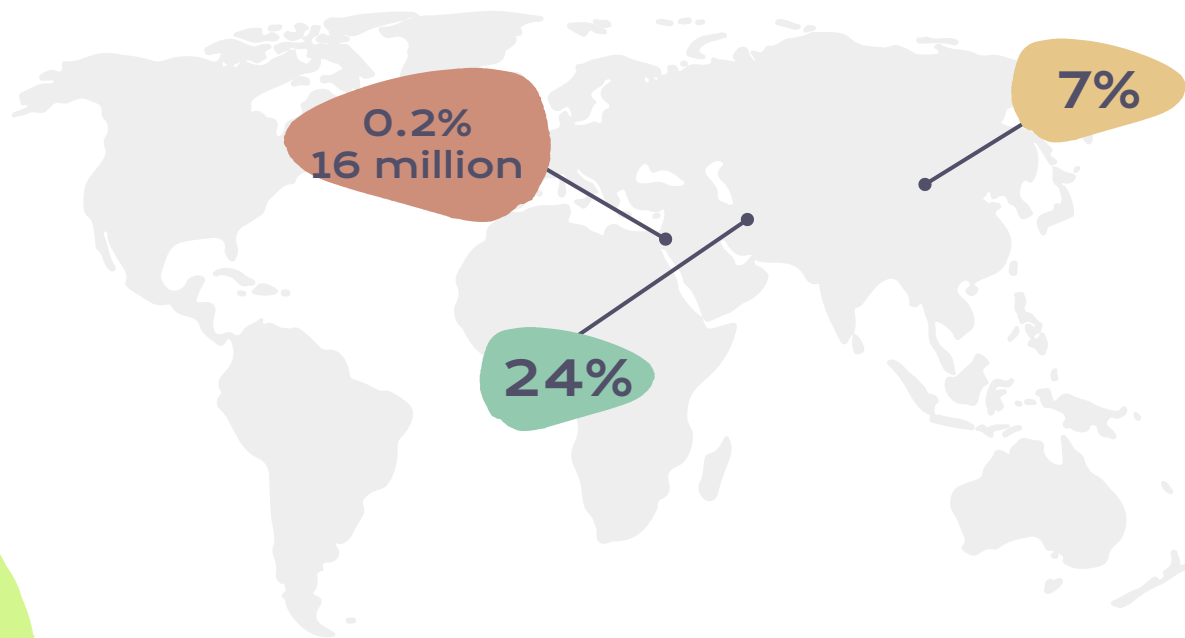
## Community

Foster a community of cooking enthusiasts and encourage social interaction.



# Expanding Globally Through Localization

Objective: To attract international users by tailoring the app's content to various languages and regional culinary preferences.



## Islam

Halal food: no alcohol, cblood, pork

## Buddhism

Vegetarianism

## Judaism

Kosher food: no port and shellfish

# Retail Partnership

Objective: Integrate with grocery retailers to enable direct ordering from the app, making shopping seamless and convenient.



# THANKS

DO YOU HAVE ANY QUESTIONS?

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