
IBM HACKATHON PROJECT

NUTRITION AI AGENT

Presented By: Omkar Pundlik Jagtap

Roll No : 2021ACAI1111046

College Name & Department : G H Rasoni College of Engineering and Management Pune , Computer Science & Engineering(Artificial Intelligence)

OUTLINE

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- IBM Cloud services used
- Wow factor
- End users
- API Reference After Deployment
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PROBLEM STATEMENT

- Today, many people want personalized nutrition advice. But most apps give same diet plans to everyone and don't consider lifestyle, culture, allergies, or health changes.
- Dieticians and nutritionists can't help everyone personally because of limited time and resources. Generative AI can solve this by creating a smart and helpful virtual nutrition assistant.
- It can understand input from text, voice, or images (like food photos or labels) and give custom meal plans and healthy food swaps.
- The assistant can also explain why a food is good and change suggestions based on feedback.
- This project uses IBM Cloud Lite and IBM Granite to build “The Smartest AI Nutrition Assistant”, making diet advice more personal and easy to access.

TECHNOLOGY USED

- IBM cloud lite services
- Natural Language Processing (NLP)
- IBM Granite model
- IBM App Connect
- Multimodal Input Analysis (Text, Voice, Image)
- Large Language models (LLM)

IBM CLOUD SERVICES USED

- IBM Cloud Watsonx AI Studio
- IBM Cloud Watsonx AI runtime
- IBM Cloud Functions
- IBM Cloud service
- IBM Granite (via watsonx.ai studio)
- IBM Cloud Object Storage
- IBM AI Tools

WOW FACTORS

- Real-time dietary plan updates based on feedback
- Smart food swaps and contextual nutritional explanations
- Multimodal understanding (image, voice, text)
- Hyper-personalized plans based on user lifestyle and culture
- Continuous learning from user interactions

END USERS

- Health-conscious individuals
- Fitness enthusiasts
- People with medical dietary needs
- Dieticians & Nutritionists
- Lifestyle coaches
- Wellness app users

API REFERENCE AFTER DEPLOYMENT

IBM watsonx

Upgrade ?

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Dallas

03

Deployment spaces / nutrition-granite-deployment_ / Nutrition agent /

Nutrition agent ✓ Deployed Online

API reference

Test

Preview

Endpoints for inferencing ⓘ

Private endpoint

https://us-south.ml.cloud.ibm.com/ml/v4/deployments/8c7f5717-8518-40a8-8c6c-3ed74eaea612/ai_service?version=2021-05-01

https://us-south.ml.cloud.ibm.com/ml/v4/deployments/8c7f5717-8518-40a8-8c6c-3ed74eaea612/ai_service_stream?version=2021-05-01

Public endpoint

https://us-south.ml.cloud.ibm.com/ml/v4/deployments/8c7f5717-8518-40a8-8c6c-3ed74eaea612/ai_service?version=2021-05-01

https://us-south.ml.cloud.ibm.com/ml/v4/deployments/8c7f5717-8518-40a8-8c6c-3ed74eaea612/ai_service_stream?version=2021-05-01

Learn more

 about the 2021-05-01 version query parameter

Code snippets

cURL

Java

JavaScript

Python

Scala

NOTE: you must set \$API_KEY below using information retrieved from your IBM Cloud account (https://dataplatfom.cloud.ibm.com/docs/content/wsj/analyze-data/ml)

Bearer <token> ⓘ

IAM

About this deployment ×

Name

Nutrition agent

Description

Change this description to reflect your particular agent

Deployment Details

Deployment ID: 8c7f5717-8518-40...

Serving name:

No serving name.

Software specification:

runtime-24.1-py3.11 ⚙

Hardware specification:

Extra extra small: 1 CPU and 2 GB RAM

Copies:

1

Tags

wx-agent

Associated asset

Nutrition agent

556240a2-8ca1-4bd3-88a8-b4fafb351af5

Last modified

Show desktop

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Nutrition agent ✔ Deployed Online

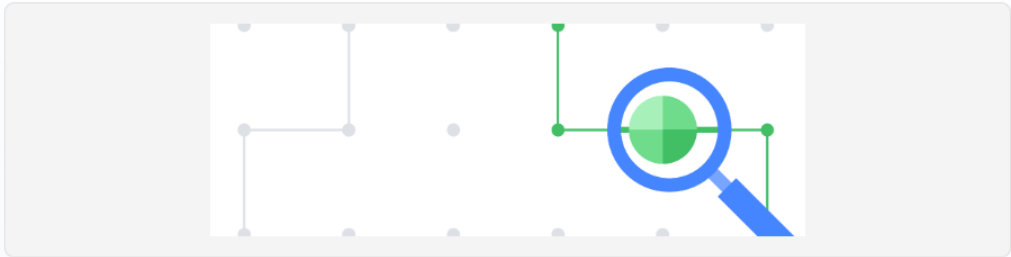
API reference Test **Preview**


New chat +

 Nutrition agent 01:01 AM


Welcome to Nutrition agent

Change this description to reflect your particular agent




Type something... 

About this deployment ×

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Last modified


2 days ago


DEPLOYMENT & PREVIEW

 IBM watsonx.ai Studio

 Search in your workspaces

Upgrade















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Dallas


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
Projects / nutrition-bot / Nutrition_Assistant_Agent_Notebook.ipynb

File Edit View Run Kernel Help

Trusted Memory:957 / 8192 MB

 Python 3.11

       Code

```
**Breakfast (8:30 AM)**
- Paneer and vegetable omelet with a slice of whole-grain bread
- A glass of freshly squeezed orange juice

**Mid-morning snack (11:00 AM)**
- A bowl of mixed fruits (like banana, apple, and berries)
- A handful of almonds

**Lunch (1:30 PM)**
- Brown rice with mixed vegetables (carrots, peas, bell peppers) and chickpeas
- Paneer tikka masala (made with coconut milk to avoid dairy)
- A small portion of mixed salad with olive oil dressing

**Evening snack (6:30 PM, post-workout)**
- Protein shake with plant-based protein powder (ensure it's free from dairy) and a banana
- A small bowl of roasted chickpeas

**Dinner (9:00 PM)**
- Quinoa with palak (spinach) and tofu
- A side of mixed vegetable curry
- A small portion of whole-grain roti or naan (ensure it's made without ghee)

To support your muscle gain and energy levels, consider these additional tips:

1. **Protein Intake**: Ensure you're consuming enough protein throughout the day. Aim for about 1.6 to 2.2 grams of protein per kilogram of your body weight.
2. **Carbohydrates**: Focus on complex carbs like brown rice, quinoa, and whole-grain products for sustained energy.
3. **Healthy Fats**: Include sources of healthy fats such as nuts, seeds, avocados, and olive oil.
4. **Hydration**: Drink plenty of water throughout the day, especially around your workouts.
5. **Supplements**: Consider plant-based protein powders and creatine supplements, which are popular among vegetarians for muscle gain.

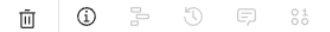
Remember, it's essential to adjust portion sizes according to your caloric needs. You might want to use a calorie tracking app to ensure you're in a slight caloric surplus for muscle growth.

Would you like me to create a detailed grocery list based on this meal plan? Or perhaps you'd like to track your meals daily to stay on track? Let me know how I can assist you further! 🍌🥗👤

*Note: This is a sample plan and should not replace professional dietary advice. Always consult with a healthcare provider or a registered dietitian for personalized guidance.*
```

RESULTS

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Nutrition agent ✓ Deployed Online

API reference

Test

Preview

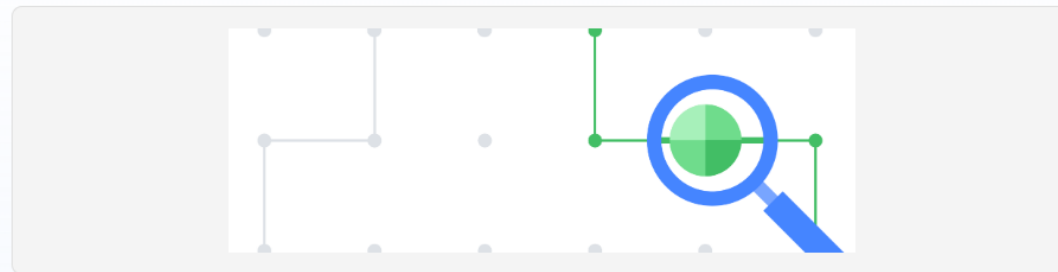
New chat +



Nutrition agent 01:01 AM

Welcome to Nutrition agent

Change this description to reflect your particular agent



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CONCLUSION

- The Nutrition AI Assistant makes healthy eating simple and personalized. By using IBM Cloud AI services, it delivers real-time, adaptive meal plans based on each person's unique needs and preferences.
- The AI Nutrition Assistant transforms generic diet planning into an adaptive, interactive experience.
- It brings scalable, personalized nutritional guidance through IBM's cutting-edge AI tools.
- This project shows how AI can solve real-life health and lifestyle challenges in a smart, easy, and user-friendly way.

GITHUB LINK

- https://github.com/Omkarj00/NUTRI-BOT_AI-Nutrition-Assistant-

FUTURE SCOPE

- Integration with fitness wearables (e.g., Fitbit, Apple Watch) to track real-time activity and calories burned for more accurate meal planning.
- AI-powered chatbot for 24/7 meal tracking, reminders, and personalized feedback based on user progress.
- Multilingual support to help users around the world with nutrition guidance in their native languages.
- Voice assistant integration (e.g., Alexa, Google Assistant) to allow hands-free access to meal suggestions and health tips.
- Offline access mode for users in rural or low-connectivity areas, ensuring uninterrupted support and meal recommendations.

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IBM LAB CERTIFICATE

IBM **SkillsBuild**

Completion Certificate



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Omkar Jagtap

for the completion of

**Lab: Retrieval Augmented Generation with
LangChain**

(ALM-COURSE_3824998)

According to the Adobe Learning Manager system of record

Completion date: 18 Jul 2025 (GMT)

Learning hours: 20 mins



THANK YOU