

IBM HACKATHON PROJECT

Nutrition Agent (NutriHolo)

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OUTLINE

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PROBLEM STATEMENT

Despite rising health awareness, most nutrition tools offer generic advice, ignoring individual differences in lifestyle, culture, allergies, and evolving health conditions. Dietitians struggle to scale personalized consultations due to time and resource constraints. There's a pressing need for a scalable, intelligent solution that delivers real-time, personalized nutrition guidance

Proposed Solution

Develop an AI-powered virtual nutrition assistant using generative AI, NLP, and multimodal understanding, hosted on IBM Cloud Lite and powered by IBM Granite. The assistant will:

- Accept inputs via text, voice, and image (e.g., food photos, grocery labels)
- Generate dynamic, personalized meal plans based on health goals, medical conditions, fitness routines, and preferences

TECHNOLOGY USED

IBM cloud lite services

Natural Language Processing (NLP)

Retrieval Augmented Generation (RAG)

IBM Granite model

IBM CLOUD SERVICES USED

- IBM Cloud Watsonx AI Studio
- IBM Cloud Watsonx AI runtime
- IBM Cloud Agent Lab
- IBM Granite foundation model

WOW FACTORS

Multimodal Input Support: Users can interact via voice, text, or images—making it accessible and intuitive.

Real-Time Adaptability: Meal plans evolve with user feedback, health changes, and seasonal food availability.

Cultural Sensitivity: Incorporates regional cuisines and dietary customs for truly personalized guidance.

Explainable AI: Offers clear, understandable reasons behind every recommendation.

Scalable Expertise: Emulates a human nutritionist's reasoning, enabling

END USERS

- 1. Health-Conscious Individuals :** People actively seeking personalized diet plans to meet fitness, wellness, or medical goals. Users with specific dietary restrictions (e.g., gluten-free, vegan, diabetic-friendly).
- 2. Patients with Chronic Conditions :** Individuals managing conditions like diabetes, hypertension, PCOS, or obesity. Need tailored nutritional guidance aligned with medical advice.
- 3. Fitness Enthusiasts & Athletes :** Users following workout routines who require optimized meal plans for performance and recovery.
- 5. Dieticians & Nutritionists :** Professionals who can use the assistant to scale their consultations, automate routine tasks, and enhance client engagement.

RESULTS

IBM watsonx

Upgrade

?

🔔

shrushti narnaware's Acco... ▾

Dallas ▾

SN

Projects / holo / NutriHolo

Share feedback β

📁 ▾

New agent +

Deploy 🚀

✎

ⓘ

Build >

Agent preview

🤖

😊 NutriHolo 02:06 PM

Welcome to NutriHolo

Hi, I'm your Nutrition AI Agent, here to help you make healthier food choices, plan meals etc.



Type something... 🗑️ ➤

RESULTS

The screenshot displays the IBM watsonx web interface. At the top, the header includes the 'IBM watsonx' logo, an 'Upgrade' button, a help icon, a notification bell, and user account information for 'shrushti narnaware's Acco...' with a location dropdown set to 'Dallas' and a profile icon 'SN'. Below the header, the breadcrumb navigation shows 'Projects / holo / NutriHolo'. A secondary navigation bar contains a 'Share feedback' button with a beta badge, a dropdown menu, a 'New agent +' button, and a 'Deploy' button with a share icon. The main content area is titled 'Agent preview' and features a blue decorative header with a white geometric pattern. Underneath, the 'Sample questions' section lists four queries in a 2x2 grid, each with a right-pointing arrow: 'What's a balanced diet for weight loss?', 'How much protein do I need daily?', 'What are healthy snacks for kids?', and 'What foods help boost immunity?'. At the bottom, there is a dark input field with the placeholder text 'Type something...' and a send icon.

RESULTS

IBM watsonx Upgrade ? shrushti narnaware's Acco... Dallas SN

Projects / holo / NutriHolo Share feedback β New agent + Deploy

Build > Agent preview

SN You: 02:06 PM
What foods help boost immunity?

NutriHolo 02:06 PM
Hi, I am your Nutrition AI Agent. How can I help you today? To boost your immunity, consider incorporating the following foods into your diet:

1. **Citrus Fruits:** Oranges, grapefruits, and other citrus fruits are high in vitamin C, which is known to increase the production of white blood cells, key to fighting infections.
2. **Red Bell Peppers:** These are an excellent source of vitamin C, containing even more than citrus fruits.
3. **Broccoli:** This vegetable is packed with vitamins A, C, and E, as well as numerous antioxidants and fiber, making it a powerful ally for the immune system.

type something...

IBM watsonx Upgrade ? shrushti narnaware's Acco... Dallas SN

Projects / holo / NutriHolo Share feedback β New agent + Deploy

Build > Agent preview

7. **Almonds:** Almonds are loaded with vitamin E, a powerful antioxidant that helps maintain the immune system.
8. **Turmeric:** The active ingredient in turmeric, curcumin, has been shown to have anti-inflammatory effects and is a very strong antioxidant.
9. **Green Tea:** It is rich in antioxidants known as catechins, which may enhance immune function.
10. **Papaya:** Papaya is rich in vitamin C and a digestive enzyme called papain that has anti-inflammatory effects.

Remember, a balanced diet, along with adequate sleep, regular exercise, and stress management, is crucial for a healthy immune system. Always consult with a healthcare provider or a nutritionist for personalized advice.

► How did I get this answer?

type something...

RESULTS

Deployed AI Agent

IBM watsonx

Upgrade ⓘ 🔔

shrushti narnaware's Account ▾ Dallas ▾ SN

Deployment spaces / ⓘ 📄 ⌛ 💬 ☰

Online deployments

3 spaces

🔼 🔍 Find deployments

Name	Asset type	Status	Space	Copies	Last updated	↓	Created	
NutriHolo	AI service	✔ Deployed	ho	1	Aug 10, 2025, 1:54 AM		Aug 10, 2025, 1:54 AM	🗑

Items per page: 20 ▾ 1–1 of 1 items

1 ▾ 1 of 1 pages ⏪ ⏩

CONCLUSION

This NutriHolo (AI agent) bridges the gap between generic diet apps and personalized nutrition counseling. By leveraging IBM Cloud Lite and IBM Granite, it delivers a smart, scalable, and empathetic AI nutrition assistant that adapts, explains, and evolves—empowering users to make informed, healthy choices every day.

GITHUB LINK

<https://github.com/shrushti21narnaware>

FUTURE SCOPE

AI Coach for Lifestyle Habits: Extend into sleep, hydration, and stress management.

Integration with Wearables: Sync with fitness trackers to adjust meal plans based on activity levels.

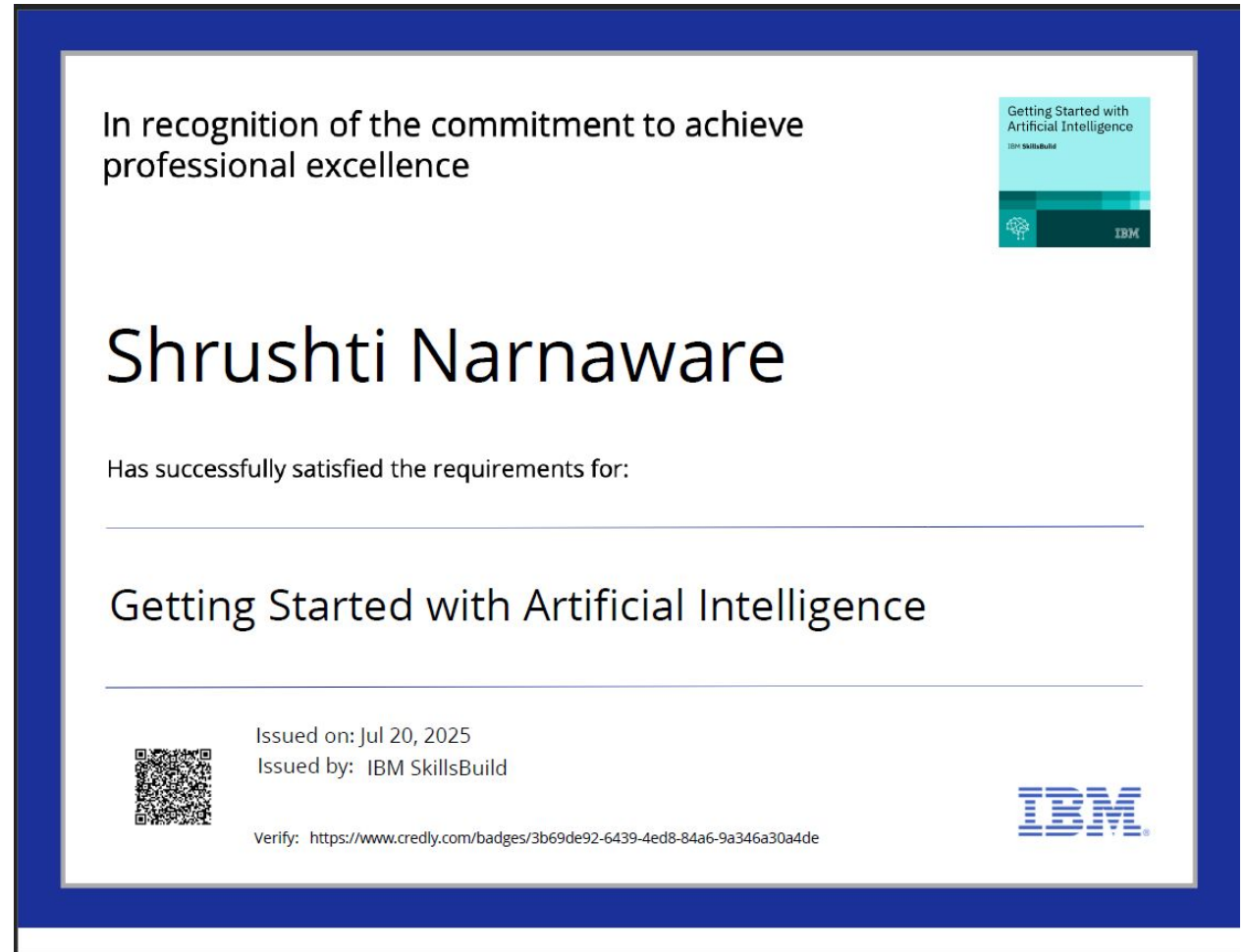
Chronic Disease Management: Tailor diets for diabetes, hypertension, PCOS, etc., with medical data integration.

Community Features: Enable recipe sharing, group challenges, and peer support.

Multilingual Expansion: Support regional languages for broader accessibility.

IBM CERTIFICATIONS

getting started with AI



RAG LAB certificate





THANK YOU