CAPSTONE PROJECT

NUTRITION AGENT

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OUTLINE

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- Wow factor
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- Git-hub Link
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PROBLEM STATEMENT

In today's fast-paced world, many individuals struggle to access reliable and personalized nutritional guidance. Common questions like "How many calories are in an apple?" or "What's a balanced 2000-calorie meal plan?" often go unanswered without expert help. Existing solutions are either too generic or hard to navigate. To solve this, we propose a Nutrition Agent built using IBM Watson x Studio, which leverages natural language understanding to provide instant, accurate, and interactive responses related to diet, calories, and nutrients. This agent empowers users to make informed food choices and build healthier habits through an intelligent, conversational interface.

Proposed Solution:

To address the need for accessible and personalized nutritional support, we propose developing a **Nutrition Agent** using **IBM Watsonx Studio** and **Watson Assistant**. This AI-powered chatbot is designed to understand natural language queries and provide instant responses related to calorie counts, nutrients, meal planning, and healthy food suggestions. The agent is trained with predefined intents and dialog flows, enabling seamless interaction with users. It can be integrated into web or mobile platforms and enhanced with a vector index or external nutrition APIs for dynamic content. This solution offers a user-friendly, scalable, and intelligent way to guide individuals toward better dietary decisions.

TECHNOLOGY USED

IBM cloud lite services

Natural Language Processing (NLP)

Retrieval Augmented Generation (RAG)

IBM Granite model

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IBM CLOUD SERVICES USED

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

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WOW FACTORS

The Nutrition Agent stands out for its ability to deliver real-time, AI-driven nutritional guidance through natural conversation, eliminating the need for complex apps or expert consultations. Built on IBM Watson x Studio, it leverages advanced NLP and vector indexing for contextual, intelligent responses. Its personalized diet suggestions, integration potential with external APIs, and scalability across platforms make it ideal for health apps, fitness portals, and wellness websites. The chatbot's simplicity, accuracy, and adaptability offer a unique blend of technology and health awareness, making it a smart companion for everyday dietary decisions.

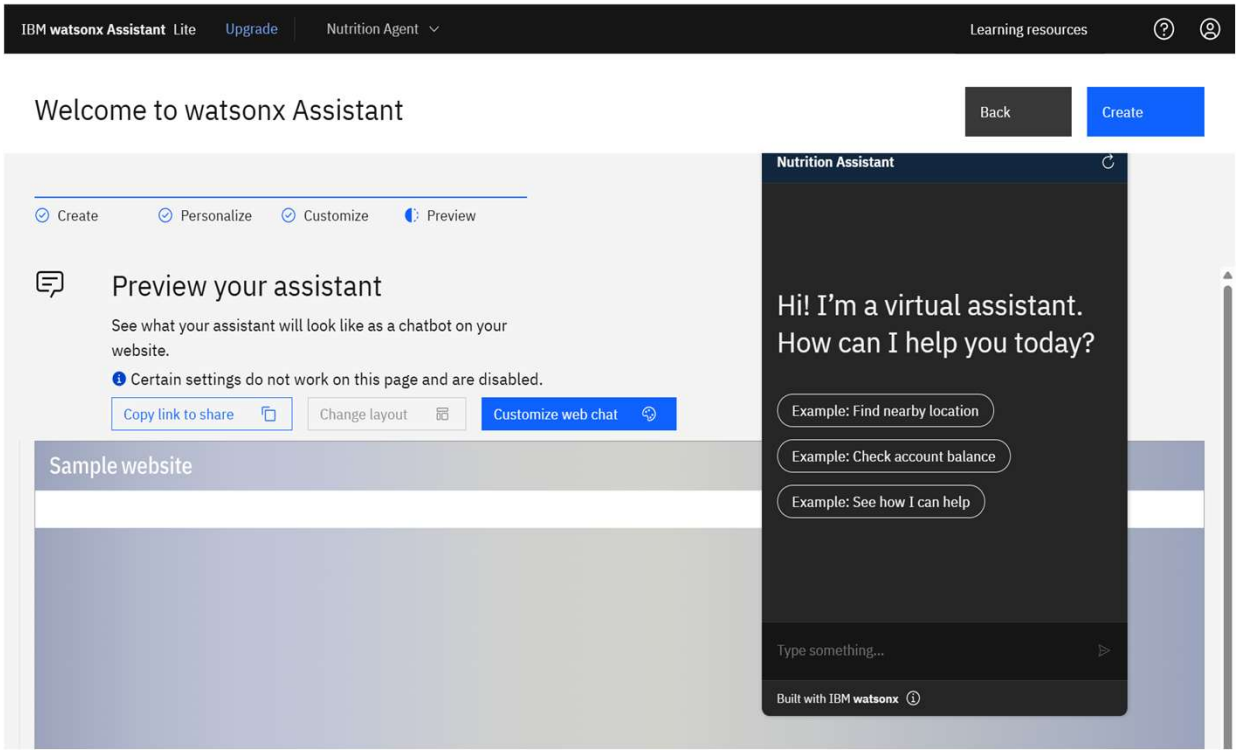
Unique features:

- AI-powered conversational interface for diet and nutrition queries
- Personalized meal and calorie-based diet suggestions
- Instant nutritional and calorie information lookup
- Supports external API integration for real-time food data
- Lightweight, scalable, and performance-optimized
- Deployable across web, mobile, or health platforms

END USERS

- Health-conscious individuals
- Fitness enthusiasts
- Dietitians and nutritionists
- Students and professionals
- Wellness app users

RESULTS



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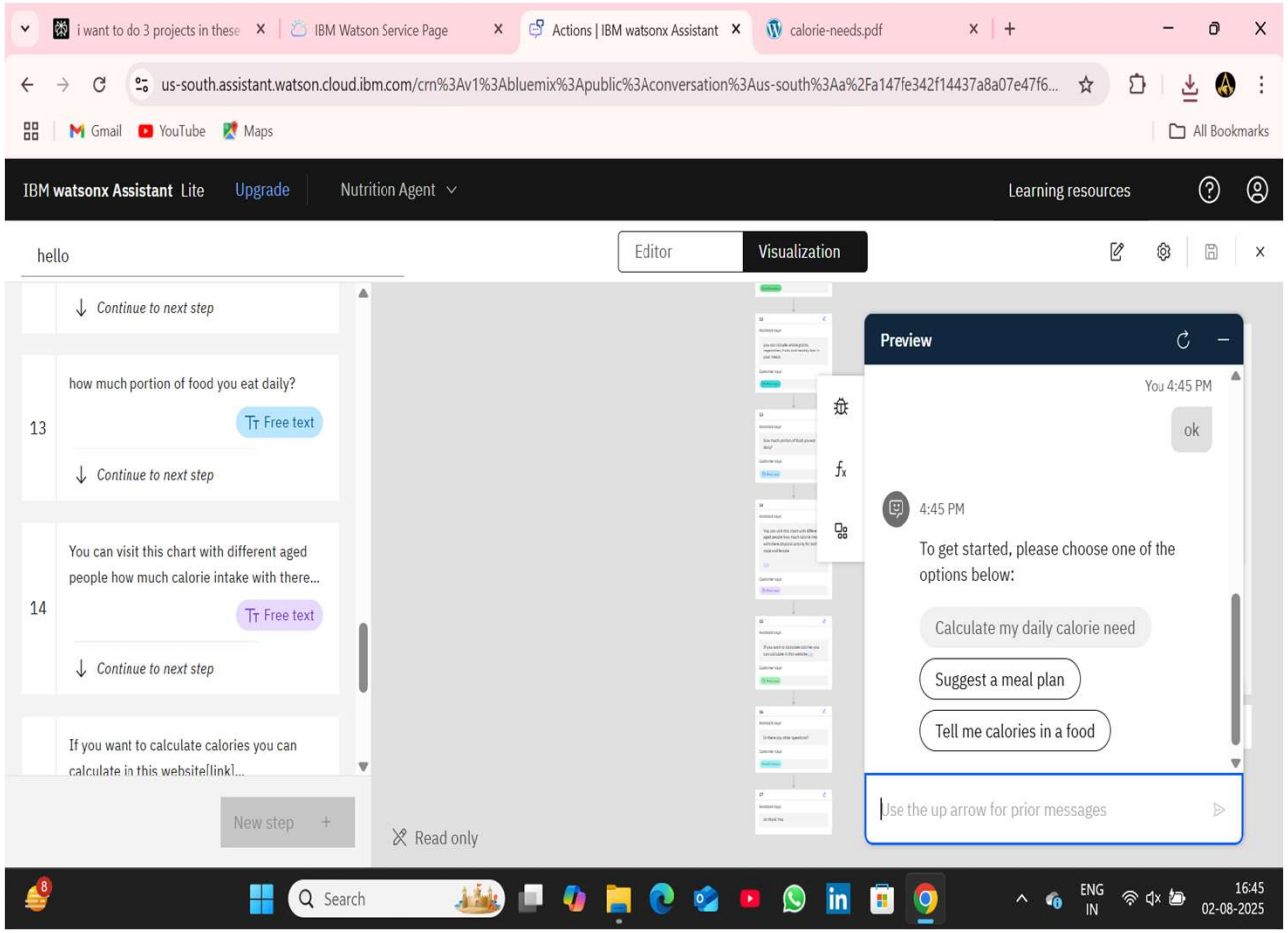
RESULTS



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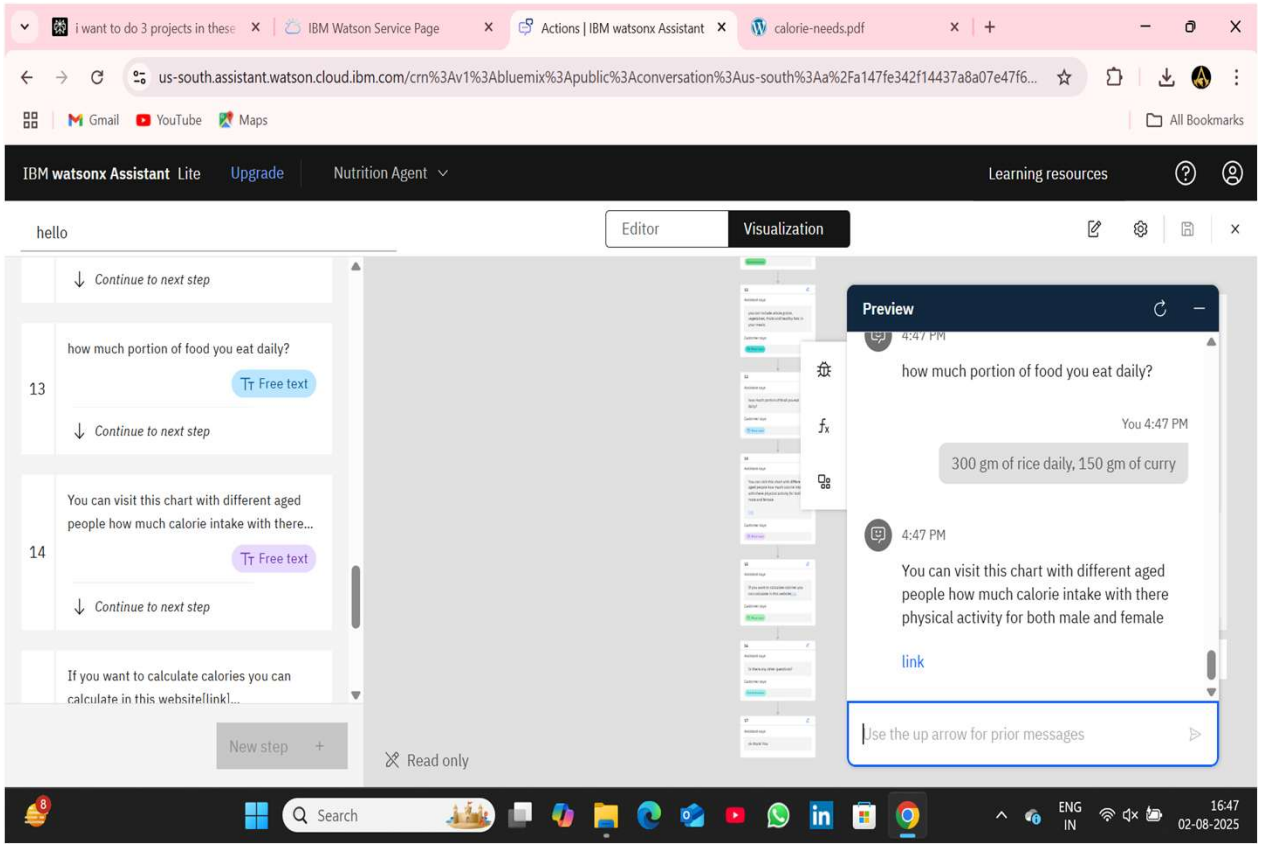
RESULTS



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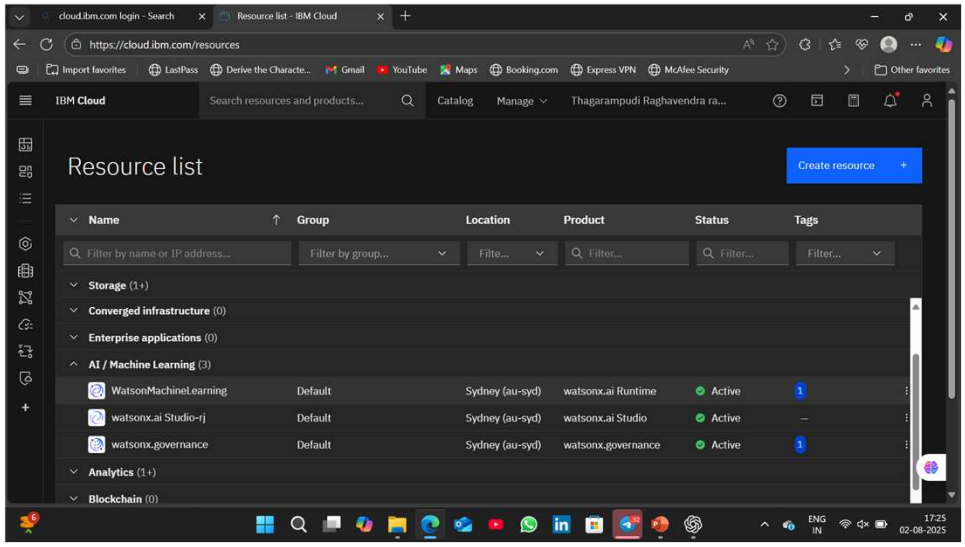
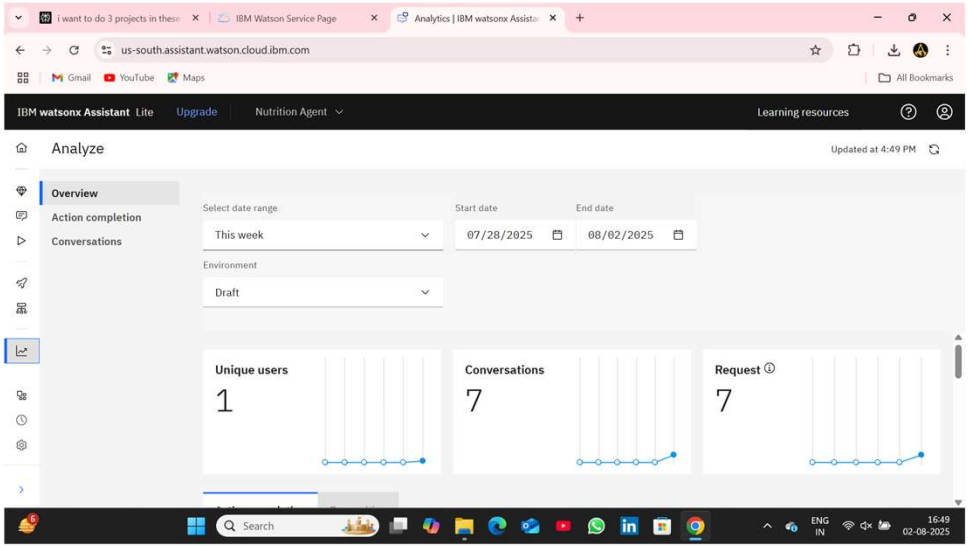
RESULTS

Deployed AI Agent





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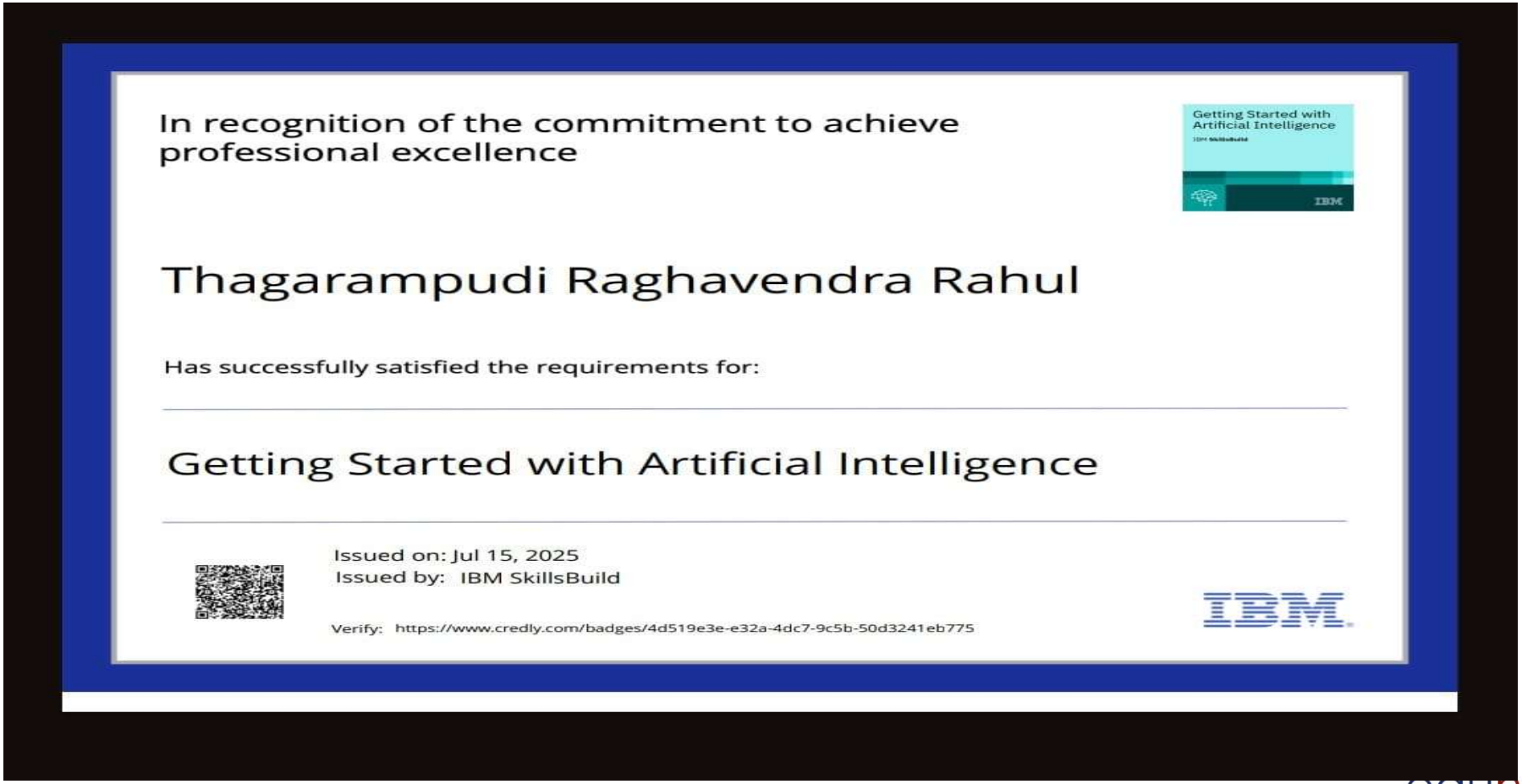
CONCLUSION

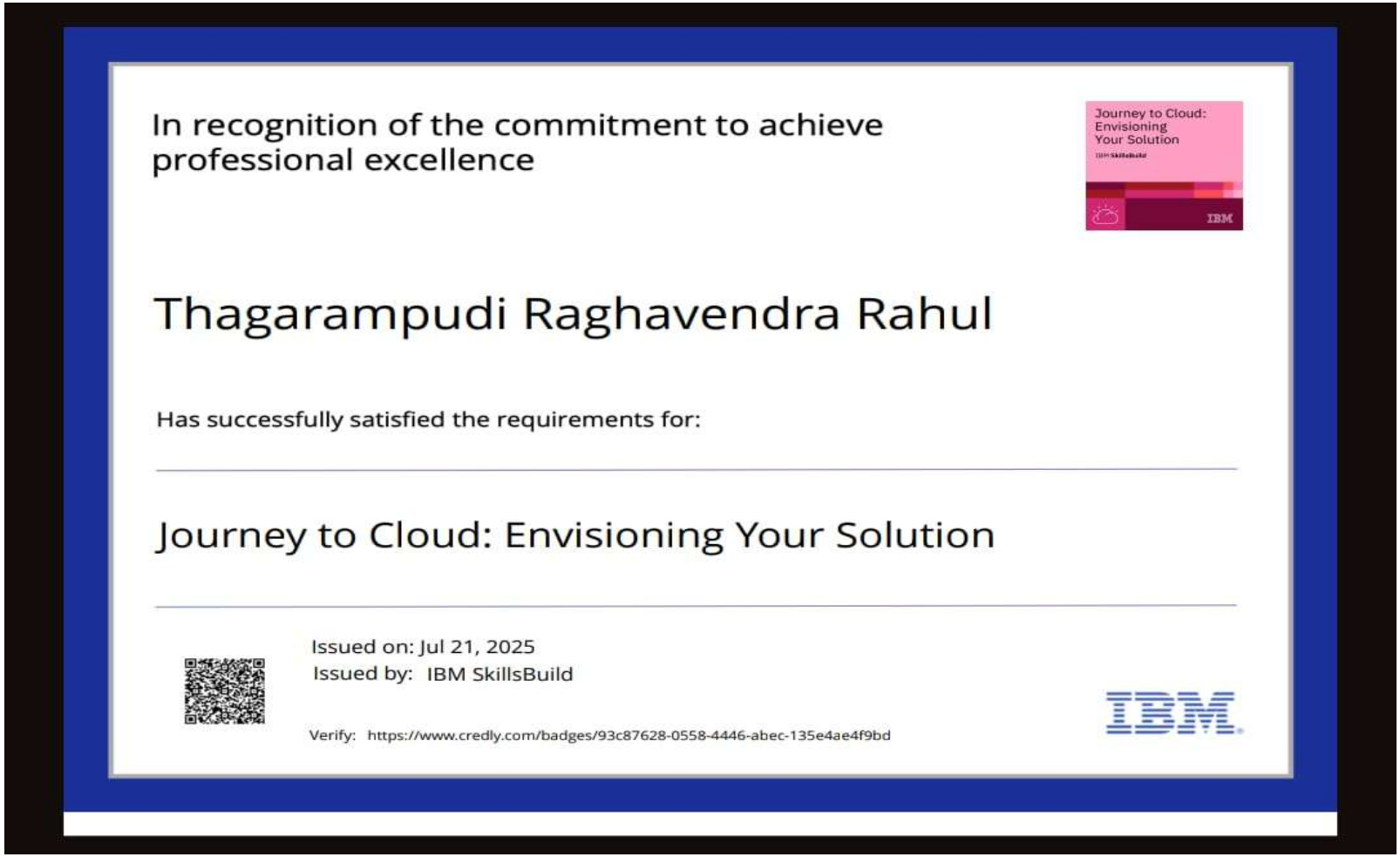
- Provides an intelligent and accessible solution for daily nutrition guidance
- Enhances user engagement through natural language interaction
- Reduces dependency on manual diet tracking or expert consultations
- Scalable and adaptable across various health and wellness platforms
- Combines AI, NLP, and vector search to deliver accurate, real-time answers
- Supports healthy lifestyle choices with personalized, user-centric design

FUTURE SCOPE

- Integrate with real-time **nutrition databases and APIs** for dynamic updates
- Add **voice-based interaction** for hands-free assistance on mobile or smart devices
- Real-Time Collaboration Features
- Enable **personalized recommendations** based on user health data (BMI, goals, allergies)
- Support **multilingual conversations** for regional language accessibility
- Enable **diet tracking and progress analytics** with charts and reminder

IBM CERTIFICATIONS





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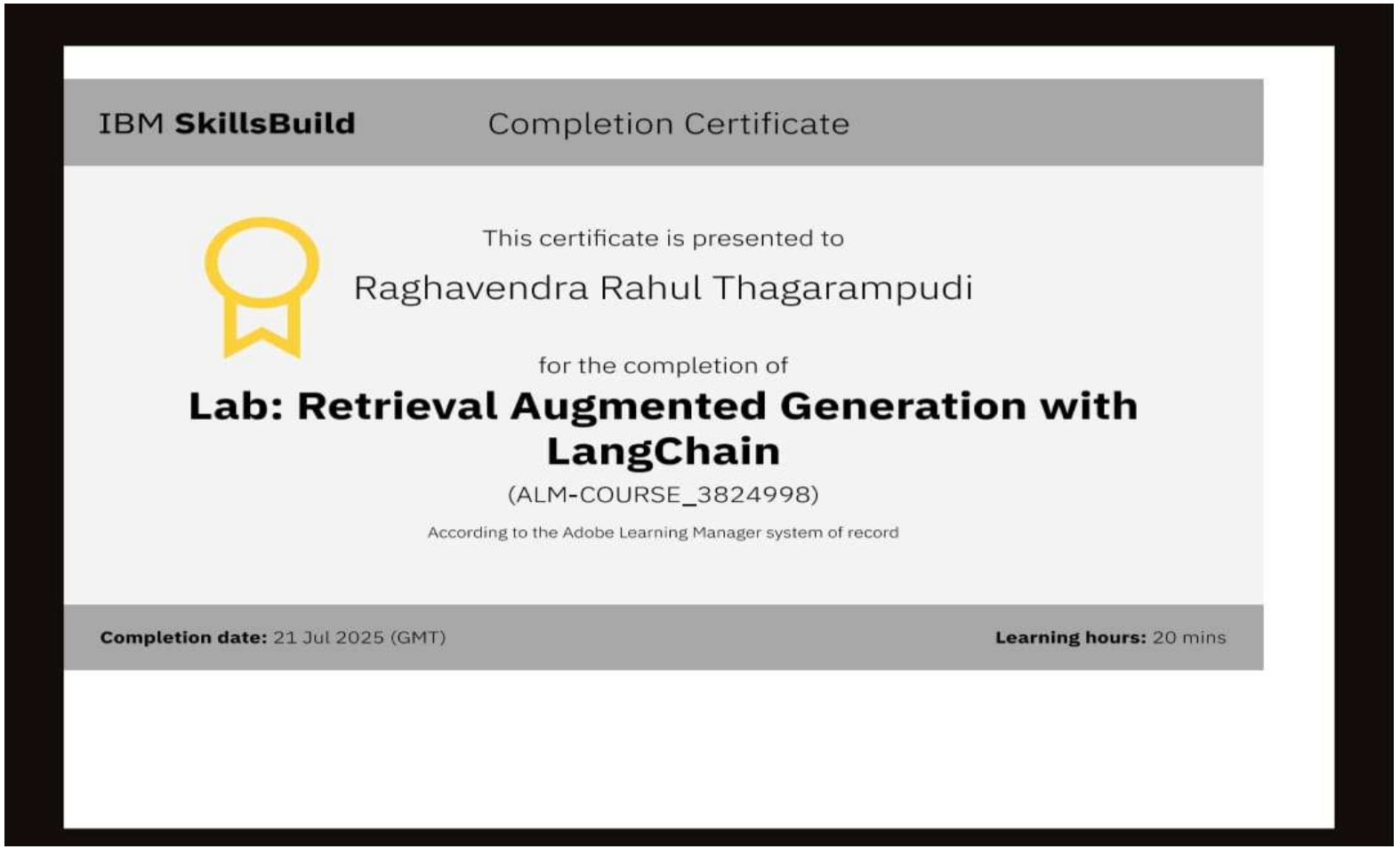

IBM **SkillsBuild** Completion Certificate

This certificate is presented to

Raghavendra Rahul Thagarampudi

for the completion of

Lab: Retrieval Augmented Generation with LangChain

(ALM-COURSE_3824998)

According to the Adobe Learning Manager system of record

Completion date: 21 Jul 2025 (GMT) **Learning hours:** 20 mins

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GITHUB LINK

- Make sure that there should be readme file

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THANK YOU

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