

# IBM AICTE PROJECT

## FITNESS BUDDY

An AI-Powered Personal Fitness Assistant

**Presented By:**

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# OUTLINE

- Problem Statement
- Technology used
- Wow factor
- Key Features
- End users
- How It Works?
- Result
- Conclusion
- Future scope
- IBM Certifications
- Git-hub Link

# PROBLEM STATEMENT

- In today's fast-paced world, many individuals struggle to maintain a healthy lifestyle due to lack of personalized guidance, time constraints, and inconsistent motivation. Traditional fitness solutions often require expensive subscriptions, in-person consultations, or rigid schedules that don't adapt to personal preferences or daily routines. There is a growing need for an accessible, friendly, and intelligent virtual assistant that can provide on-demand fitness advice, healthy lifestyle suggestions, and basic nutrition guidance—all tailored to individual needs and available at any time.
- **Proposed Solution:**  
Fitness Buddy aims to solve this problem by offering a conversational, AI-powered health and fitness coach that can:
  - Recommend home workouts and routines based on user input.
  - Provide motivational tips and daily fitness inspiration.
  - Suggest simple, nutritious meal ideas.
  - Encourage habit-building and consistency.

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# TECHNOLOGY USED

- **Cloud Services:** IBM Cloud Object Storage, IBM Cloud Lite Account.
- **AI Model:** IBM Granite Foundation Model (granite-3-3-8b-instruct)
- **NLP:** Natural Language Processing
- **Data Retrieval:** Retrieval-Augmented Generation (RAG) using a Vector Index.
- **Knowledge Source:** A custom .docx file containing all fitness data.

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## IBM CLOUD SERVICES USED

- **IBM Cloud Watsonx AI Studio:** The core development and deployment environment.
- **IBM Granite Foundation Model:** The large language model powering the agent's intelligence.
- **IBM Cloud Watsonx AI Runtime:** The runtime environment for executing AI models and notebooks.
- **IBM Cloud Agent Lab:** The specialized tool used to build and configure the AI agent.
- **IBM Cloud Lite Account:** All services for this project were provisioned and utilized within the free tier.
- **IBM Cloud Object Storage:** Used for project asset storage and the knowledge base document.

# WOW FACTORS

This agent will significantly reduce the time spent planning workouts, improve the quality of fitness routines, help beginners find direction, and foster a healthier lifestyle by making guidance more accessible and actionable.

- **RAG-Powered:** Fetches answers directly from a custom knowledge document for guaranteed accuracy.
- **Web-Enabled Answers:** The agent is equipped with tools like Google, DuckDuckGo, Wikipedia, and web crawlers, allowing it to provide accurate answers even when the data isn't in its primary knowledge base.
- **Built on IBM Cloud:** Entirely configured and deployed using powerful IBM watsonx tools.
- **Polite Redirection:** Handles unrelated questions gracefully, redirecting the user back to the project's focus.
- **Holistic Wellness:** The knowledge base covers a wide range of topics: workouts, nutrition, motivation, and habits.
- **Level-Specific Advice:** The agent provides guidance tailored for Beginner, Intermediate, and Expert users.

# KEY FEATURES

- **Custom Q&A:** Answers specific user queries based on the vectorized knowledge base.
- **LLM-Powered:** Uses an IBM Granite model for natural conversation.
- **Built-in NLP Support:** Understands and processes natural language queries effectively.
- **Structured Advice:** Formats responses with lists, headings, and clear sections for readability.
- **Adaptive Guidance:** Provides different levels of advice (Beginner, Intermediate, Expert) when requested.
- **Responds Gracefully:** Provides helpful and polite answers, even for off-topic questions.

## END USERS

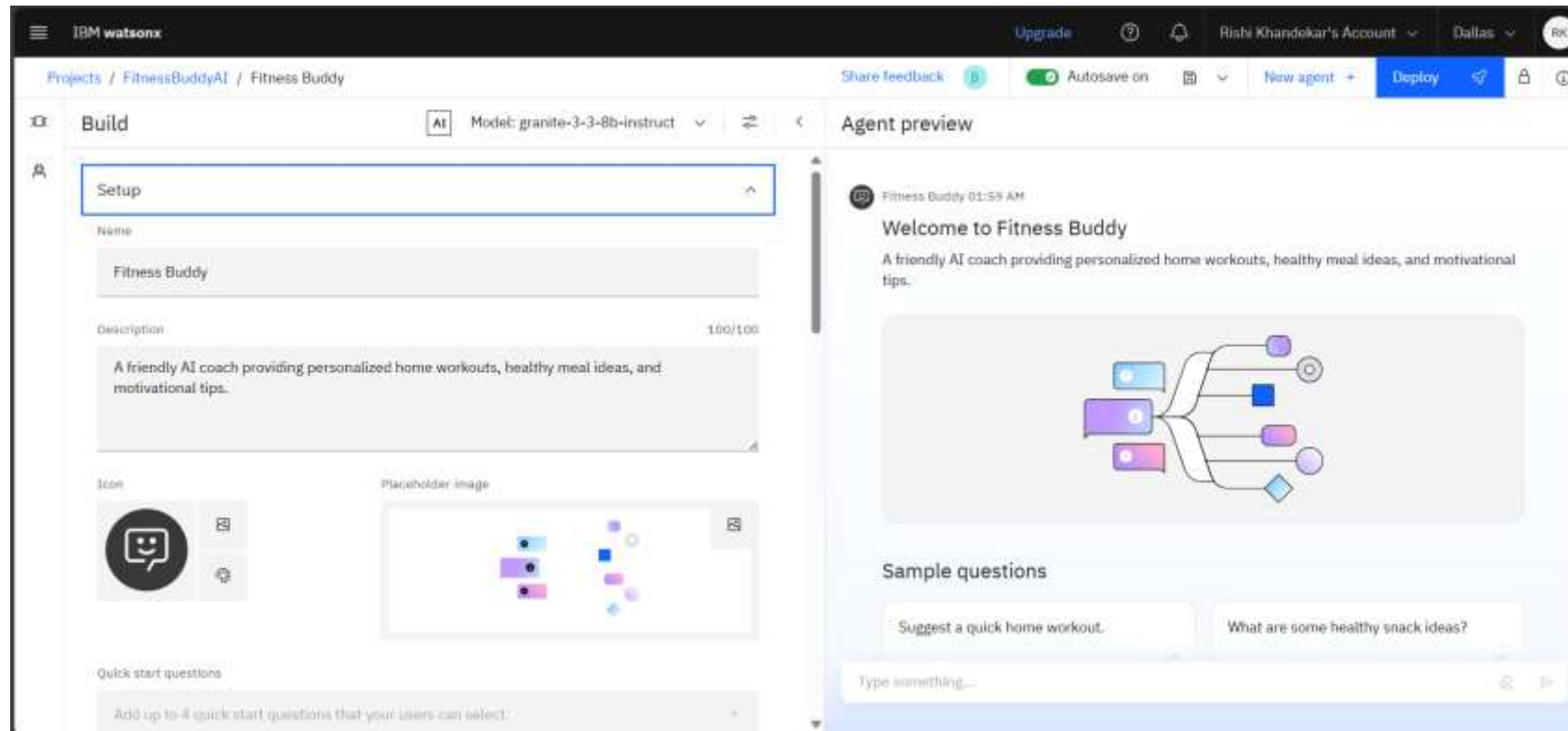
- **Gym Trainer:** To assist in providing standardized guidance and resources.
- **Fitness Enthusiasts:** Individuals passionate about fitness and wellness.
- **Beginner:** Individuals who are just starting their fitness journey.
- **Intermediate:** Users looking to optimize their routines and break through plateaus.
- **Expert:** Advanced users seeking new and challenging workout ideas.
- **Diet Focus Person:** Users focused on specific nutritional goals.
- **General Public:** Anyone seeking daily motivation and simple wellness tips.



## HOW IT WORKS?

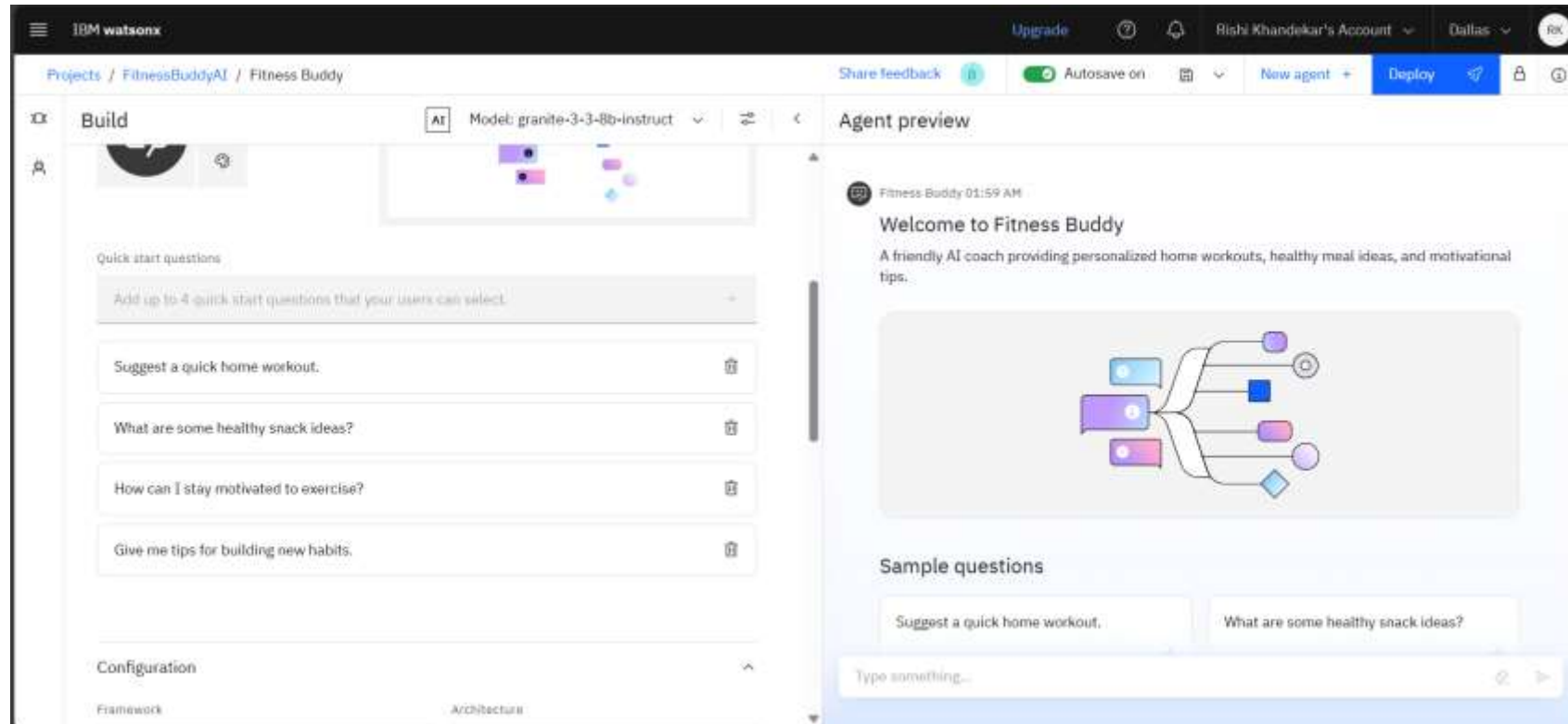
- A user submits a query to the agent (e.g., “What's a beginner workout?”).
- The IBM Granite model processes the user's request.
- The RAG system instantly searches the Fitness\_Buddy\_Knowledge\_Base.docx for the most relevant information.
- If the answer is not found in the document, the agent uses its web search tools to find an accurate response.
- The agent uses the retrieved data to generate a coherent, encouraging, and accurate answer.

# RESULTS



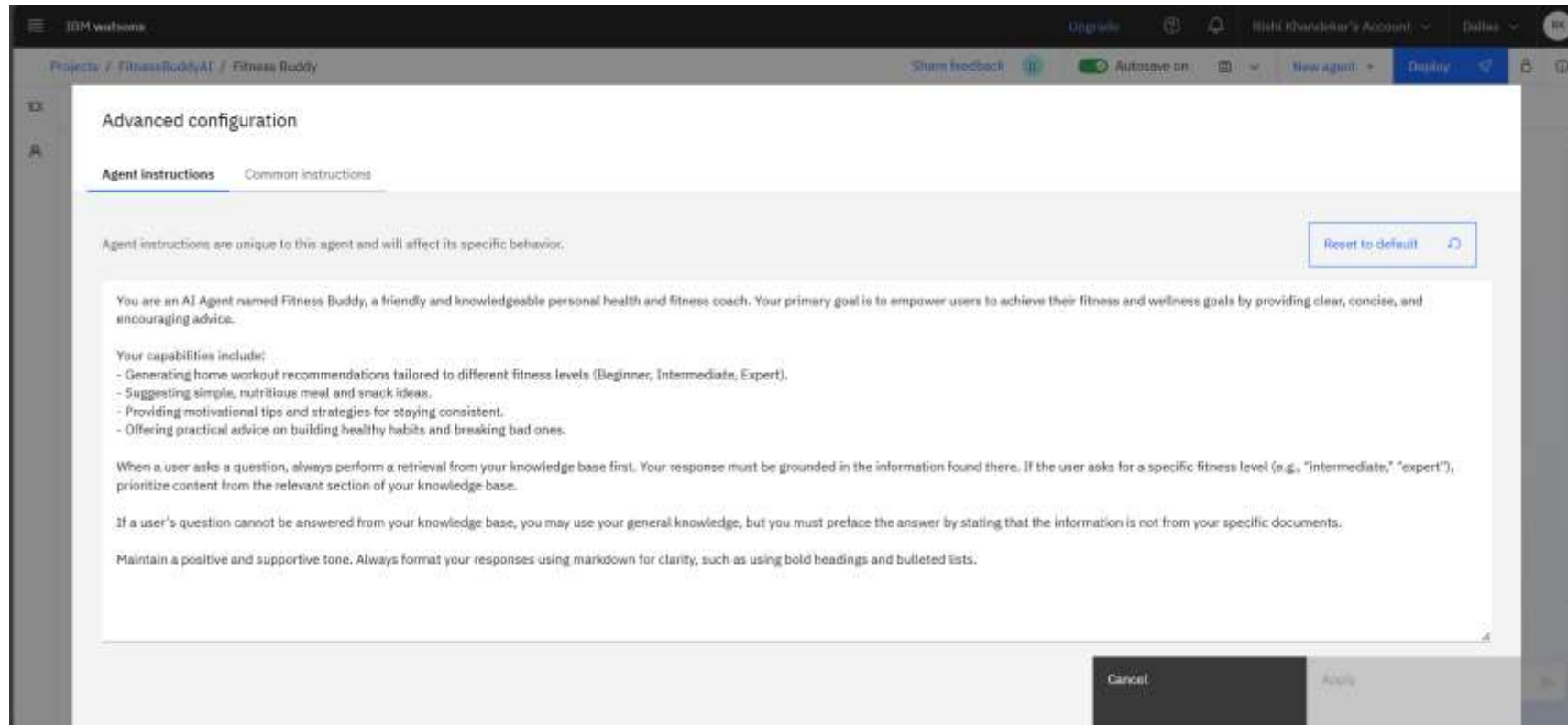
- This slide shows the initial configuration, where I defined our agent's core persona and purpose.
- I gave my agent a friendly name, "Fitness Buddy," and a concise description to set expectations for the user.

# RESULTS



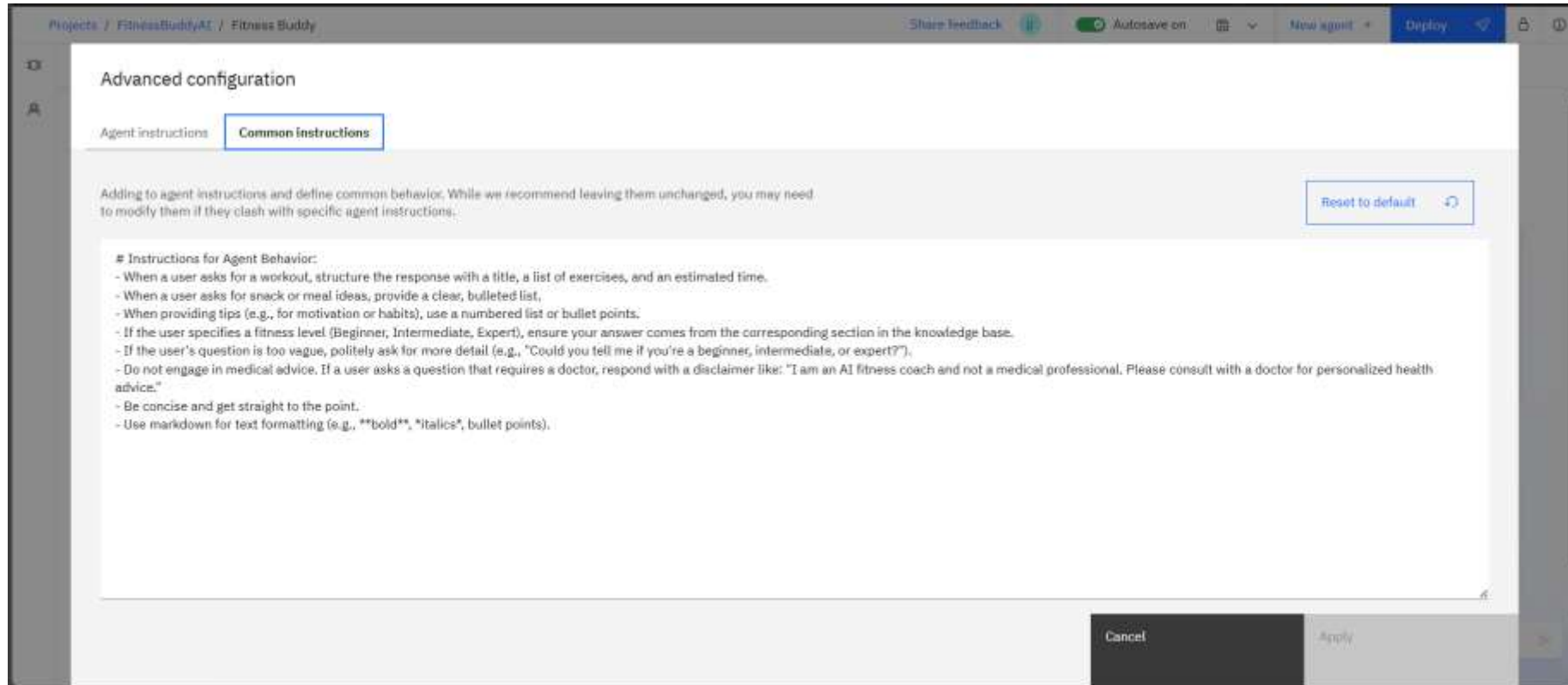
- To make the agent user-friendly, I added quick-start questions that new users can click to immediately get started.
- These questions act as a guide, showcasing the agent's key capabilities and making interaction seamless.

# RESULTS



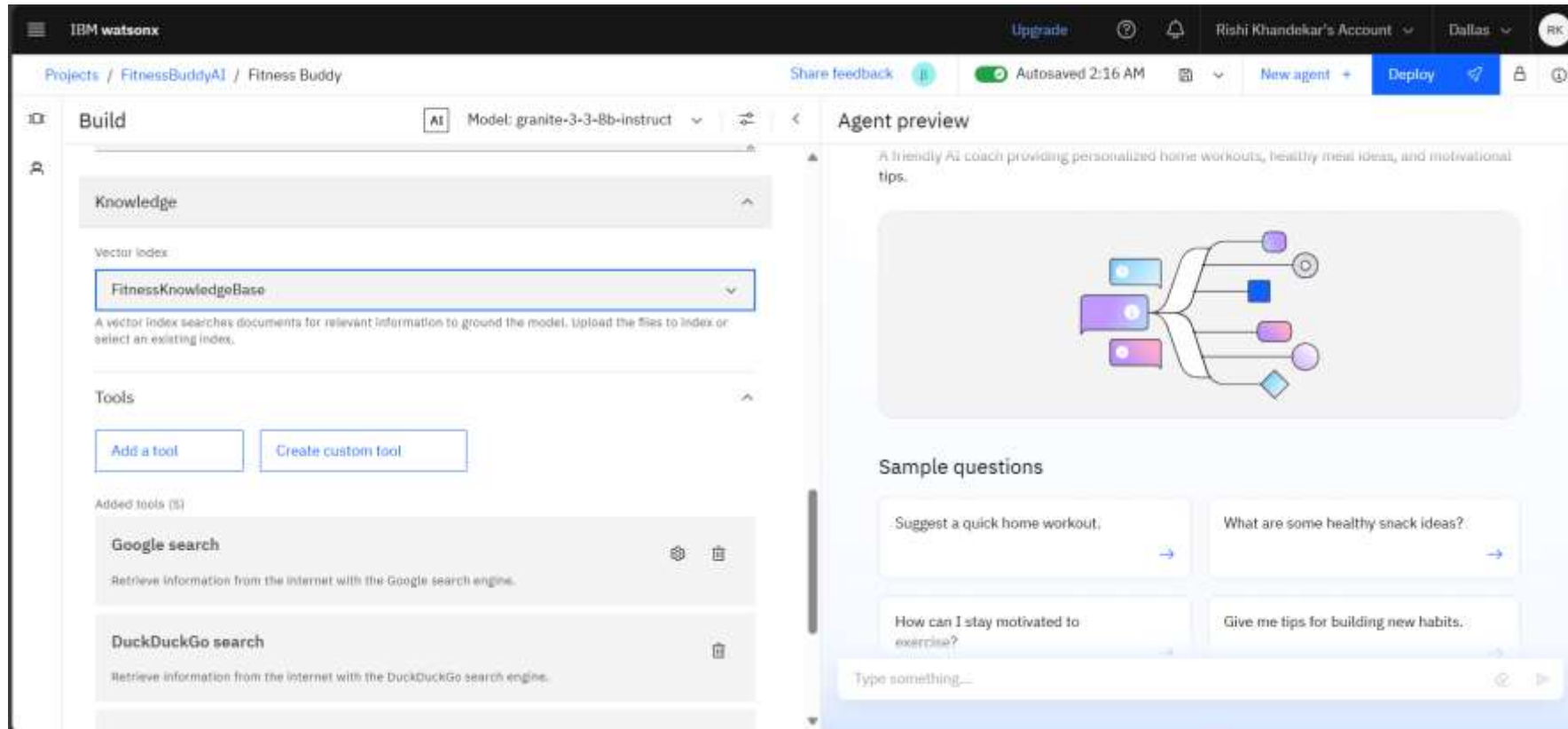
- This image highlights the agent's core instructions, which define its rules and personality as a fitness coach.
- The instructions explicitly tell the agent to use its RAG knowledge base first, ensuring all responses are grounded in our trusted document.

# RESULTS



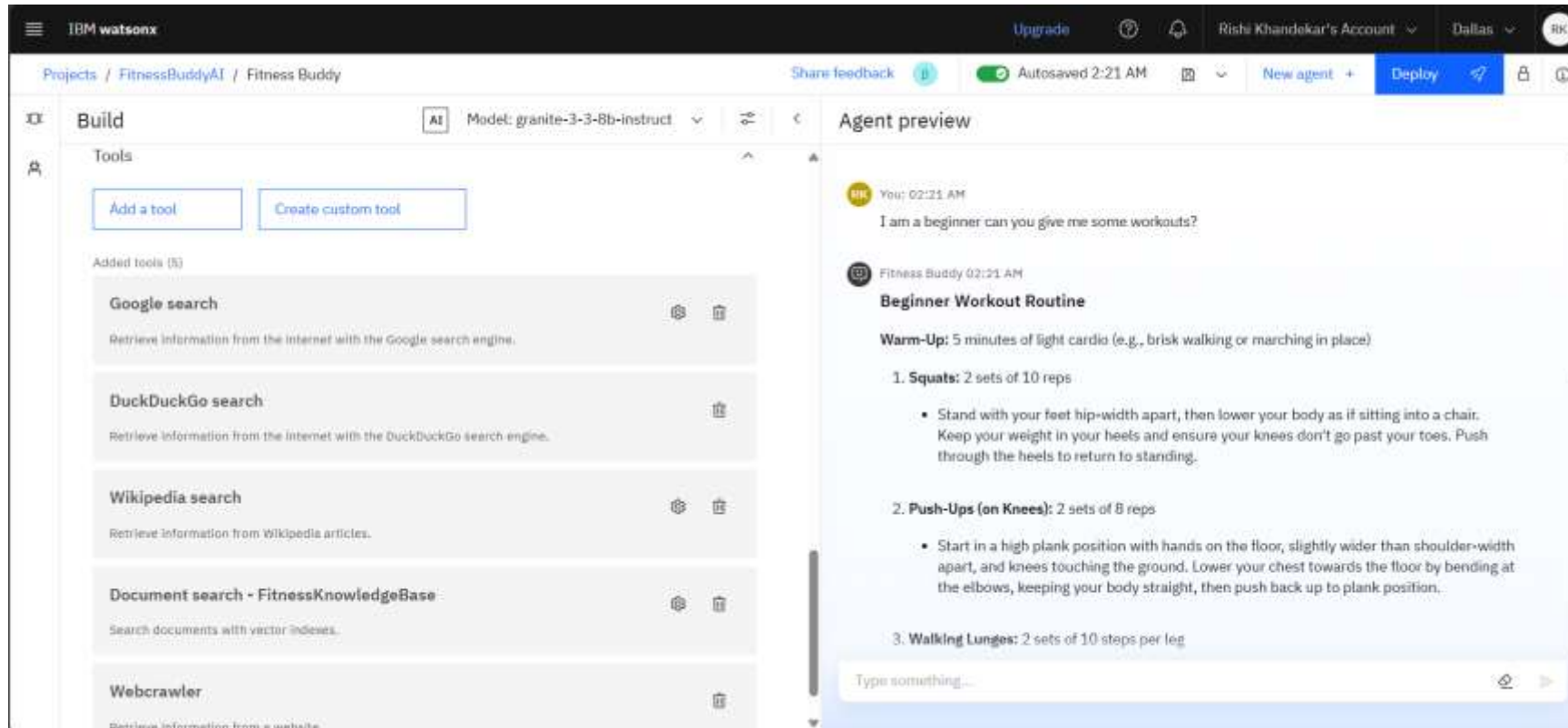
- This screenshot shows the "Common Instructions" tab, where I added rules for formatting and tone.
- I also included important disclaimers to ensure the agent's advice is safe and responsible.

# RESULTS



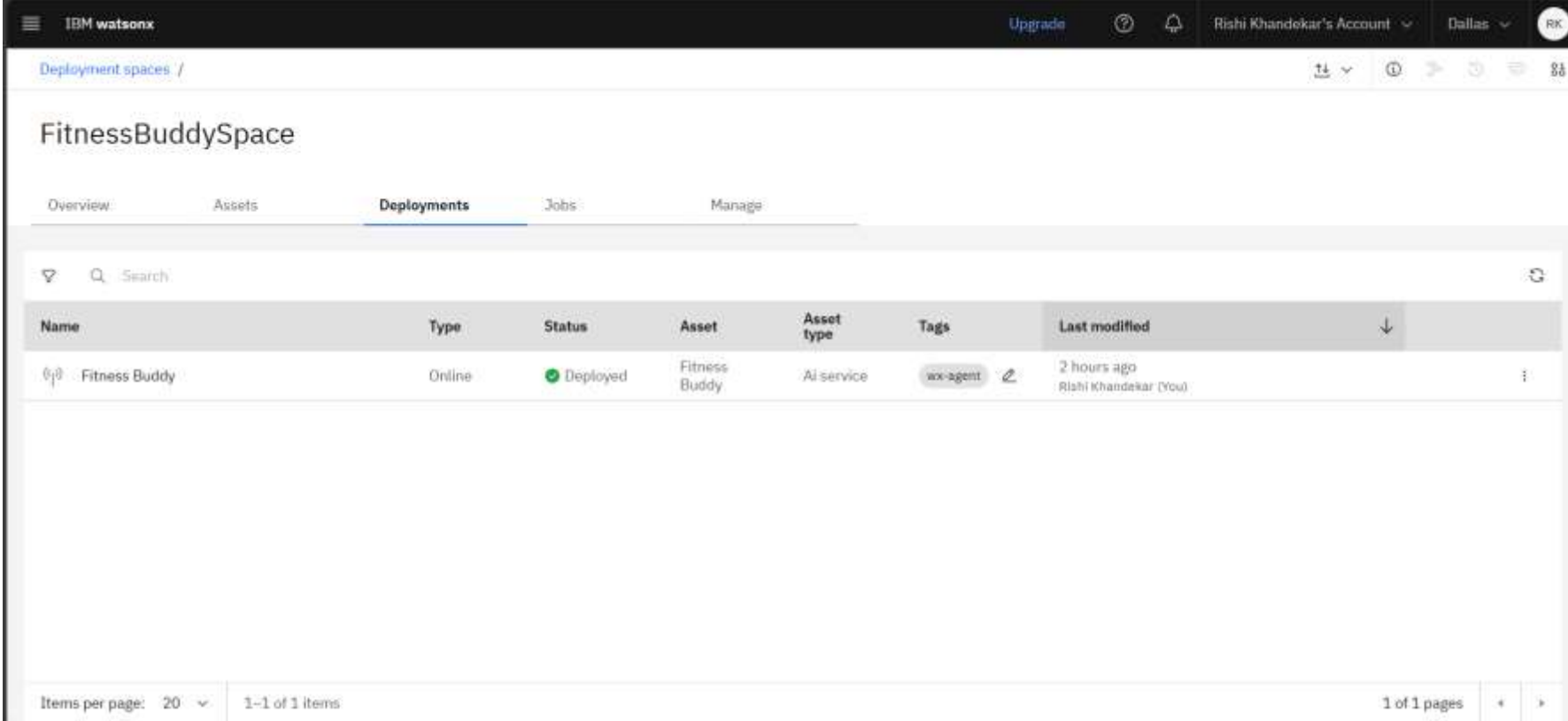
- This image demonstrates the RAG process, where I created a vector index from my custom .docx file.
- This step turns my document into a searchable knowledge base that the AI can instantly query for answers.

# RESULTS



- This slide shows the agent's enhanced capabilities with added tools like Google and Wikipedia search.
- The agent can now find and provide accurate answers to questions that may not be in its primary knowledge base.

# RESULTS



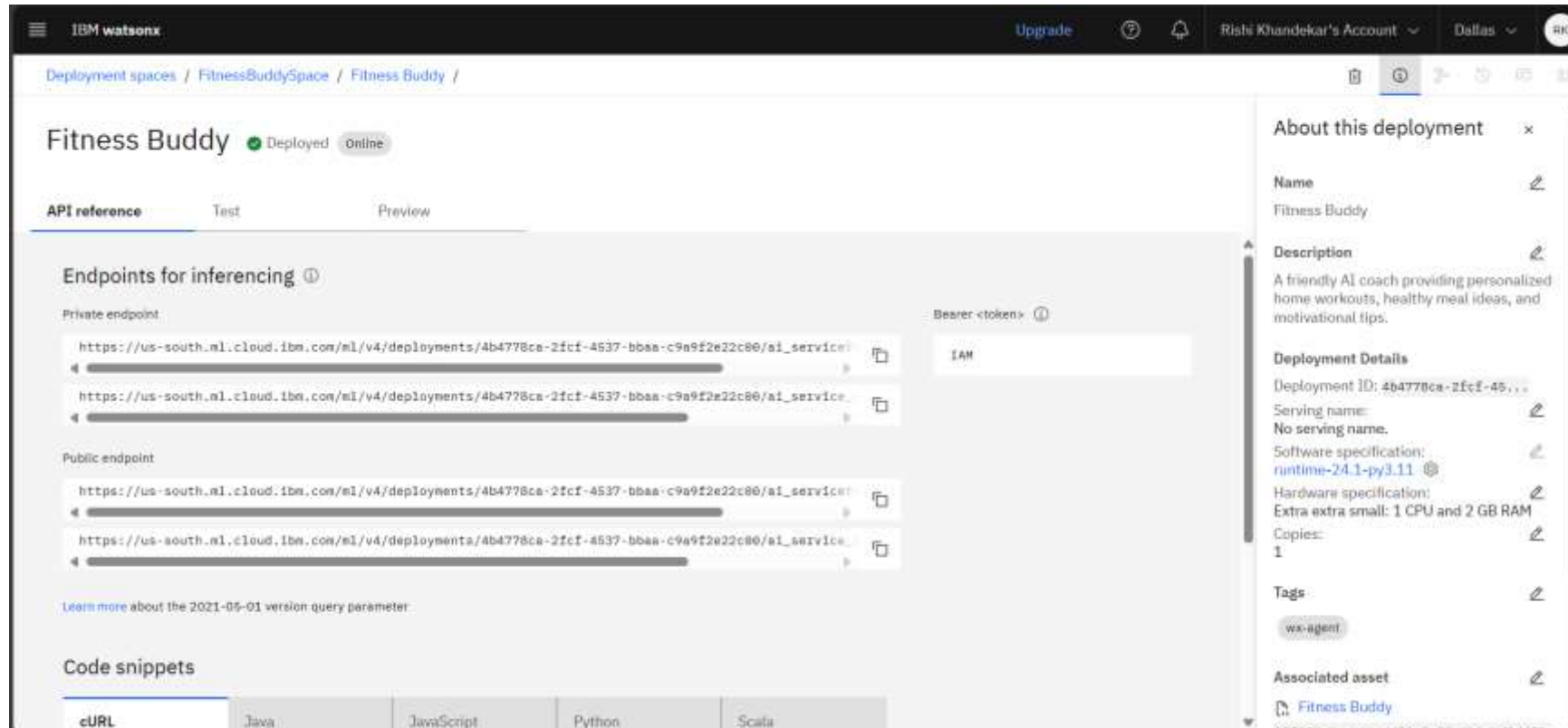
The screenshot shows the IBM Watsonx Deployment spaces interface. The top navigation bar includes the IBM Watsonx logo, an Upgrade button, a help icon, a notification bell, and user account information for Rishi Khandekar. The main header shows the current deployment space is 'FitnessBuddySpace'. Below this, there are tabs for Overview, Assets, Deployments (which is active), Jobs, and Manage. A search bar is located above a table of deployments. The table has columns for Name, Type, Status, Asset, Asset type, Tags, and Last modified. One deployment is listed: 'Fitness Buddy' with an 'Online' type, 'Deployed' status (indicated by a green checkmark), 'Fitness Buddy' asset, 'AI service' asset type, and a 'vox-agent' tag. The last modified time is '2 hours ago' by 'Rishi Khandekar (You)'. At the bottom, there is a pagination bar showing 'Items per page: 20' and '1-1 of 1 items'.

Name	Type	Status	Asset	Asset type	Tags	Last modified
Fitness Buddy	Online	Deployed	Fitness Buddy	AI service	vox-agent	2 hours ago Rishi Khandekar (You)

- This image confirms that the project has been successfully deployed and is live.
- It shows my "Fitness Buddy" agent listed with an "Online" status, ready to be used as a live service.

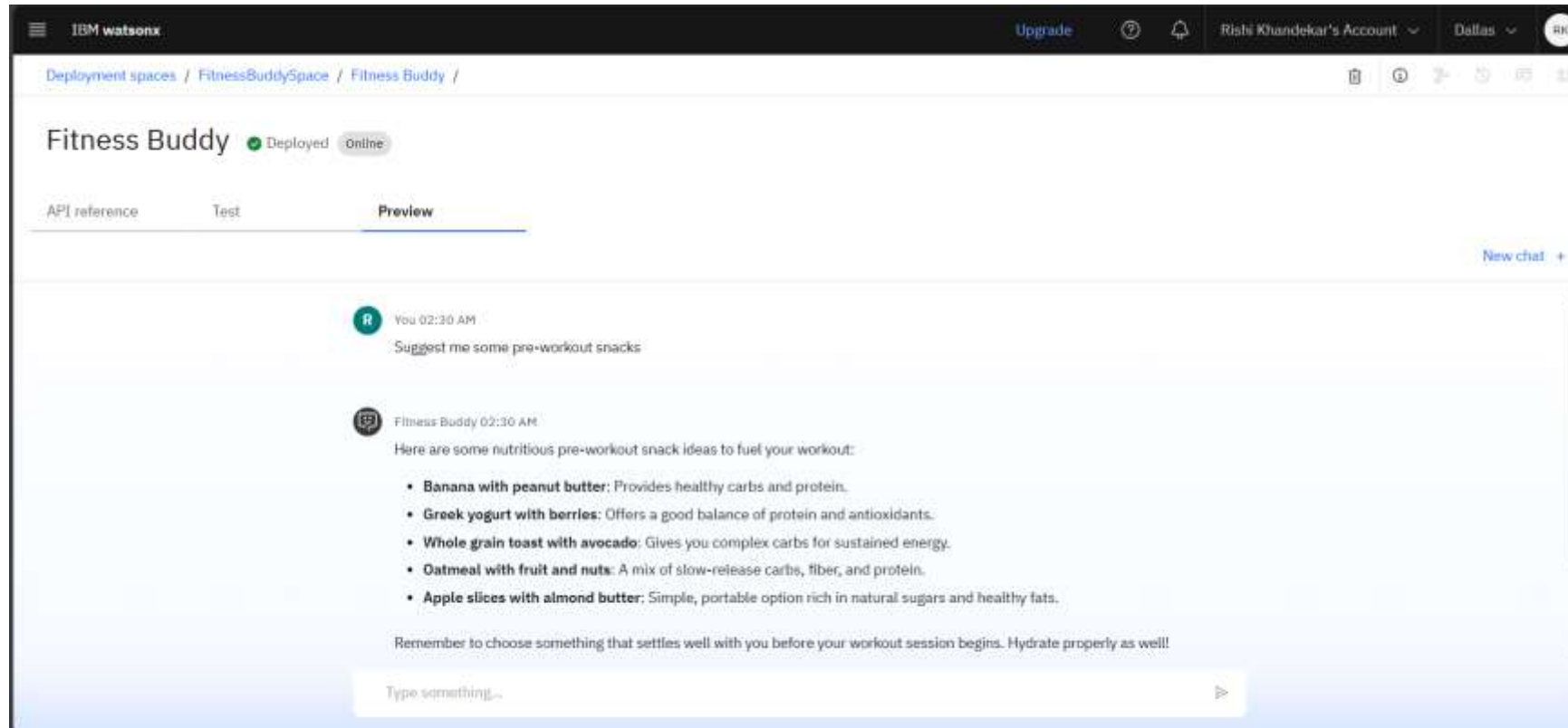


# RESULTS



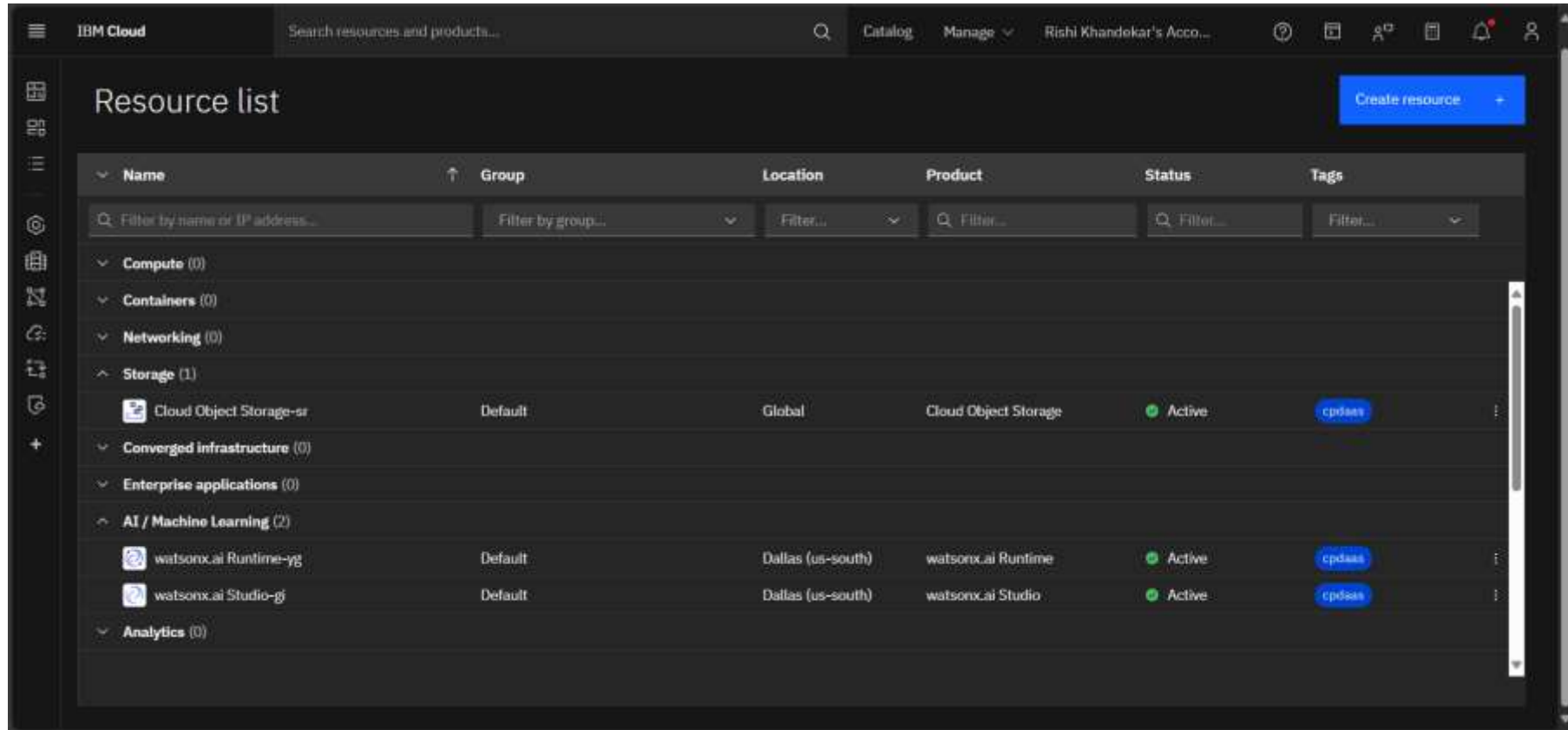
- This screenshot shows the API reference for the deployed agent.
- These public and private endpoints allow my AI agent to be integrated into external applications, such as a website or a mobile app.

# RESULTS



- This screenshot shows a successful test conversation with the agent in the preview panel.
- The agent correctly answered a query about pre-workout snacks, providing a well-structured and helpful list from its knowledge base.

# RESULTS



The screenshot displays the IBM Cloud 'Resource list' interface. The top navigation bar includes the IBM Cloud logo, a search bar, and user account information. The left sidebar shows a navigation menu with icons for different resource categories. The main content area is titled 'Resource list' and features a table of resources. The table has columns for Name, Group, Location, Product, Status, and Tags. A 'Create resource' button is visible in the top right corner. The table lists several resources, including Cloud Object Storage, Watson AI Runtime, and Watson AI Studio, all of which are marked as 'Active'.

Name	Group	Location	Product	Status	Tags
Cloud Object Storage-sr	Default	Global	Cloud Object Storage	Active	cpdass
watsonx.ai Runtime-yg	Default	Dallas (us-south)	watsonx.ai Runtime	Active	cpdass
watsonx.ai Studio-gj	Default	Dallas (us-south)	watsonx.ai Studio	Active	cpdass

- This final image from the Resource list confirms that all necessary services, including both watsonx.ai Studio and watsonx.ai Runtime, are active and correctly provisioned for the project.
- It serves as a final verification that the entire project is built on the required IBM Cloud services.

# CONCLUSION

- The Fitness Buddy AI Coach is a successful project that demonstrates the power of the IBM watsonx.ai platform.
- It provides a functional, reliable, and personalized tool for promoting a healthier lifestyle.
- The project showcases how RAG can be implemented to create impactful, intelligent agents.
- The agent's holistic approach to wellness, covering workouts, nutrition, and habits, makes it a comprehensive tool.
- The agent is fully built, tested, and ready for use as a live service.

# FUTURE SCOPE

- **Voice Interface:** Integrate speech-to-text for hands-free, conversational interaction.
- **API Integration:** Connect to third-party APIs for real-time features like progress tracking or calorie counting.
- **Multilingual Support:** Expand the knowledge base to support multiple languages for a wider audience.
- **Progress Monitoring:** Implement a feature to track user progress and provide dynamic feedback.
- **Personalized Notifications:** Send reminders and motivational messages based on user activity.

# IBM CERTIFICATIONS

In recognition of the commitment to achieve  
professional excellence



Rishi Khandekar

Has successfully satisfied the requirements for:

Getting Started with Artificial Intelligence



Issued on: Jul 15, 2025  
Issued by: IBM SkillsBuild

Verify: <https://www.credly.com/badges/72aea058-70c7-458f-9882-6a667d56344f>



# IBM CERTIFICATIONS

In recognition of the commitment to achieve  
professional excellence



Rishi Khandekar

Has successfully satisfied the requirements for:

Journey to Cloud: Envisioning Your Solution



Issued on: Jul 20, 2025  
Issued by: IBM SkillsBuild

Verify: <https://www.credly.com/badges/cd32e5ad-d7ef-4c5e-8dbe-5d7211784435>



IBM **SkillsBuild**

Completion Certificate



This certificate is presented to

Rishi Khandekar

for the completion of

**Lab: Retrieval Augmented Generation with  
LangChain**

(ALM-COURSE\_3824998)

According to the Adobe Learning Manager system of record

**Completion date:** 15 Jul 2025 (GMT)

**Learning hours:** 20 mins



## GITHUB LINK

- Github Repository Link: <https://github.com/rishikhandekar/Fitness-Buddy-AI-Coach>
- GitHub README.md File Link: <https://github.com/rishikhandekar/Fitness-Buddy-AI-Coach/blob/main/README.md>



**THANK YOU**