CAPSTONE PROJECT

INTERVIEW TRAINER AGENT

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OUTLINE

- **Problem Statement** (Should not include solution)
- **Proposed System/Solution**
- **System Development Approach** (Technology Used)
- **Algorithm & Deployment**
- **Result (Output Image)**
- **Conclusion**
- **Future Scope**
- **References**

PROBLEM STATEMENT

An Interview Trainer Agent, powered by RAG (Retrieval-Augmented Generation), prepares users for job interviews by generating tailored question sets and preparation strategies based on their profile name, experience level, and job role. It retrieves role-specific interview questions, industry expectations, behavioral scenarios, and HR guidelines from recruitment portals, professional networks, and company interview databases. Users can input their resume or job title, and the agent provides targeted questions, model answers, and improvement tips. It supports both technical and soft skill assessment, ensuring a comprehensive interview prep experience. This AI-driven assistant builds user confidence, sharpens responses, and increases success rates in competitive hiring environments.

PROPOSED SOLUTION

- The proposed system aims to create a RAG based AI agent to be a personal Interview Trainer.
- Free all the current resources :
  - If there is any currently running resource in IBM cloud then free those resources .
- IBM Watsonx :
  - Open Watsonx and choose AI Agents tab .
  - Then choose Agent lab → Watsonx.ai home tab then create a project .
  - Now click on the “Built an AI agent to automate your task”
  - Then based on the requirements create an project (AI Agent) , don’t forget to add the watsonx.ai runtime service to the project.
- IBM Watsonx AI Agent :
  - In the agent page one can choose the models from the drop down.
  - then we can write the Instruction to the bot like how it needs to respond to the user based on quarry.
  - Next add the RAG document file . We can use docx file or pdf as our RAG document to which our bot will take reference to answer the quarry.
  - Then add the necessary tools that the bot will use to answer the user quarry.
- Testing :
  - We need to test the bot that it is working and responding to the user in the intended way or not.
- Deployment:
  - Create an API key and finally Deploy the AI Agent

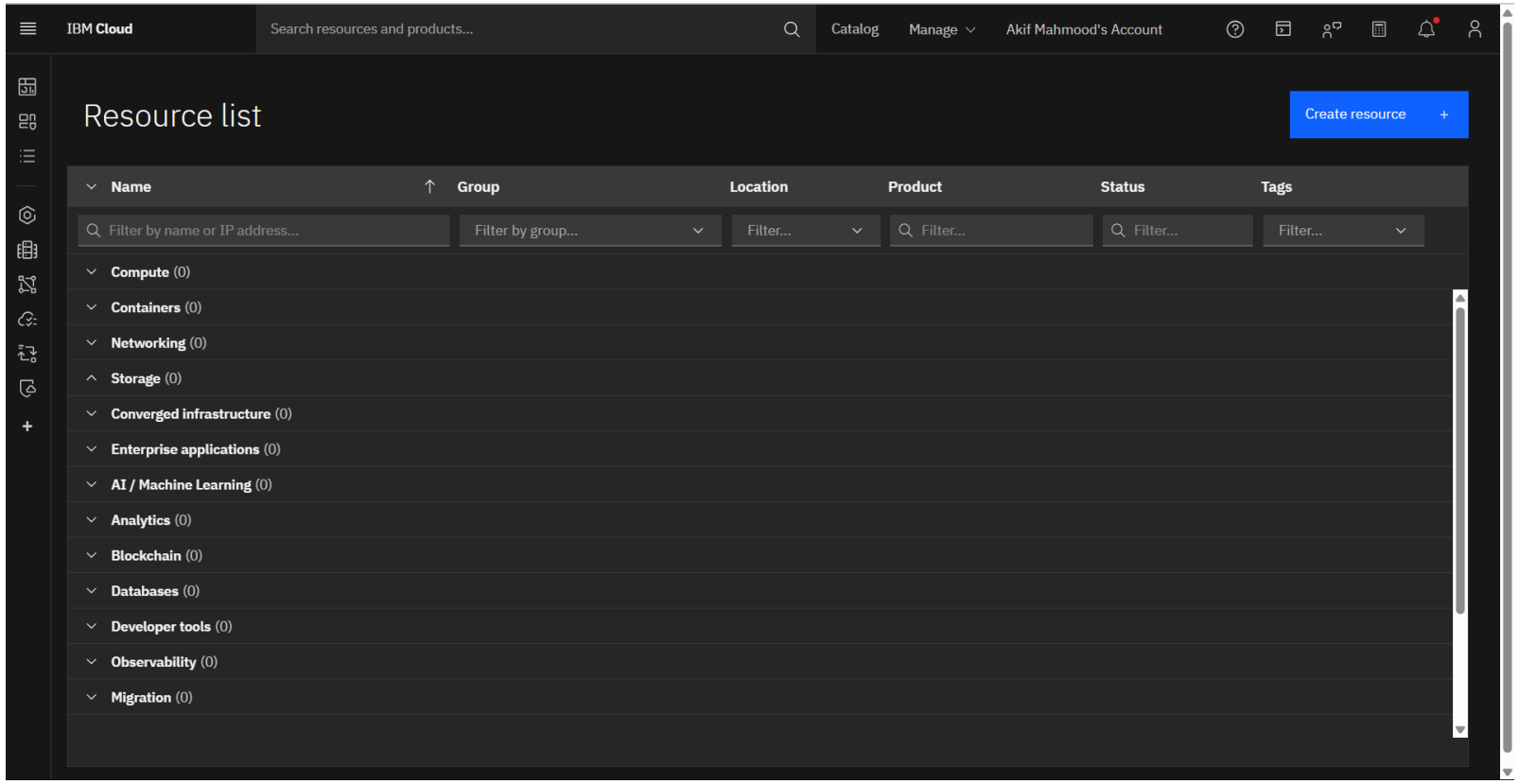
SYSTEM APPROACH

❖ Requirements –:

- Browser
- Internet Connection
- IBM cloud Free tier

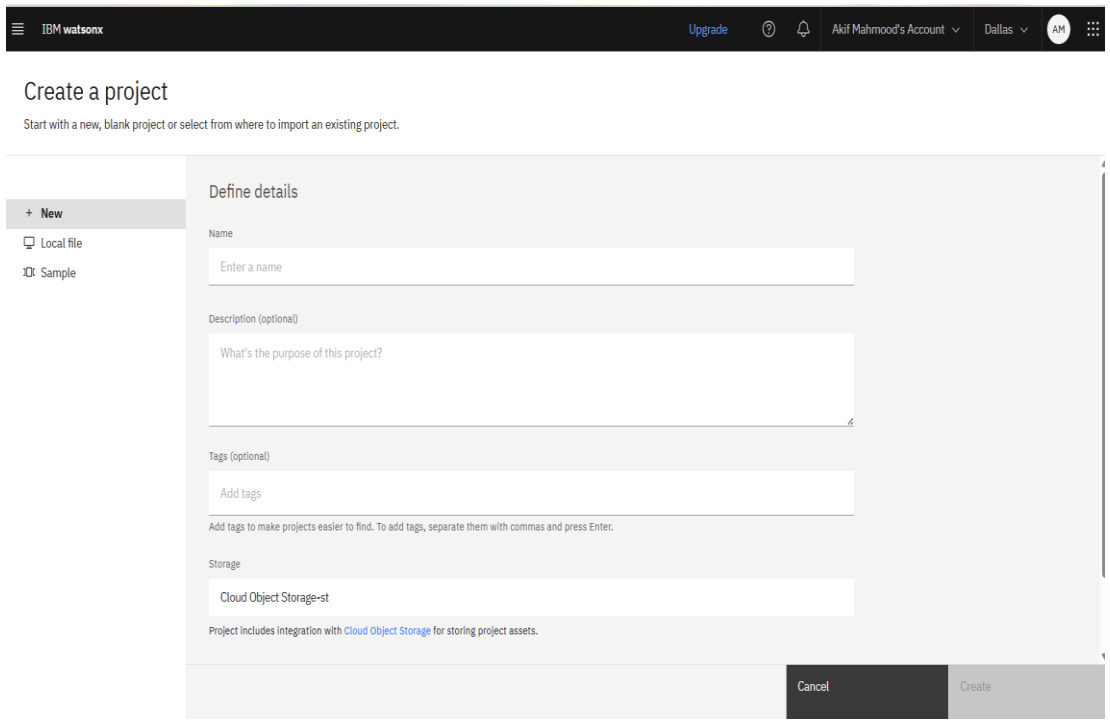
ALGORITHM & DEPLOYMENT

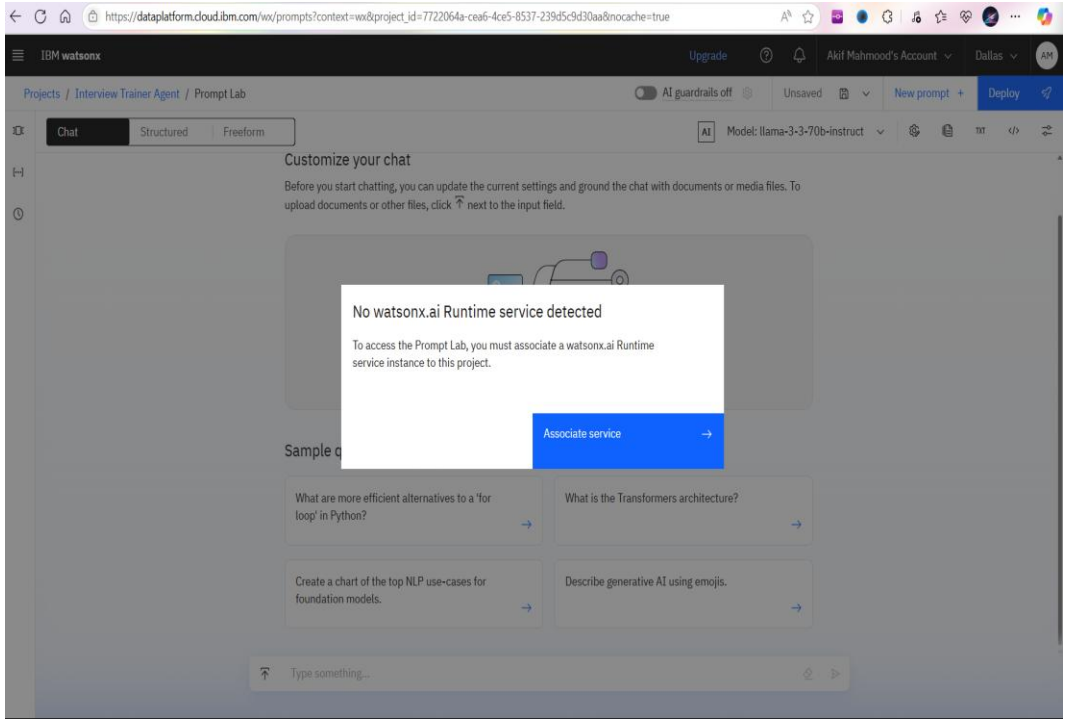
- **Free all the current resources:** Before starting a new project, it's best practice to de-provision any unused resources to avoid unnecessary costs. This ensures your cloud environment is clean and optimized for your new project.



ALGORITHM & DEPLOYMENT

IBM Watsonx: Open the Watsonx platform and navigate to the AI Agents tab to begin your project. Create a new project, which serves as a container for all your agent's resources, including the watsonx.ai runtime service.





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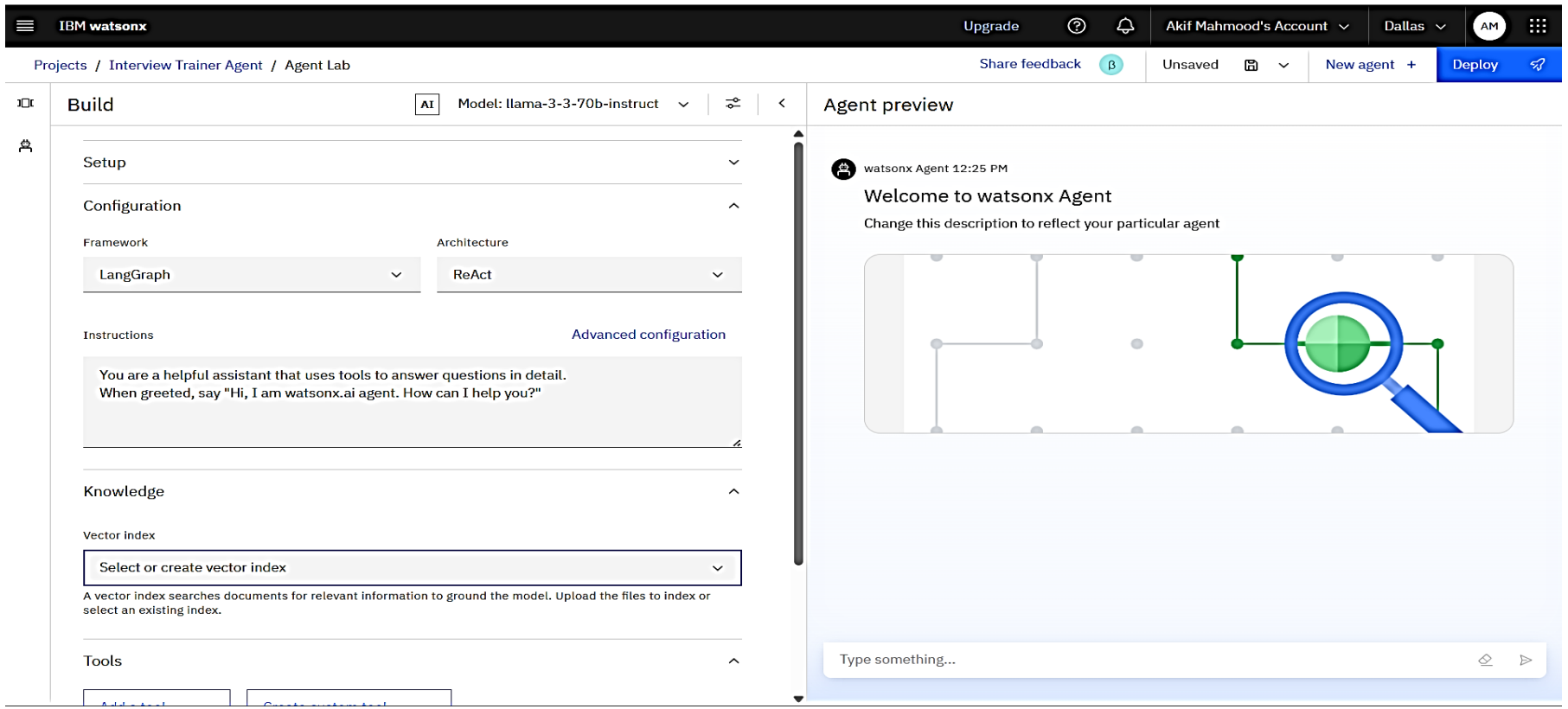
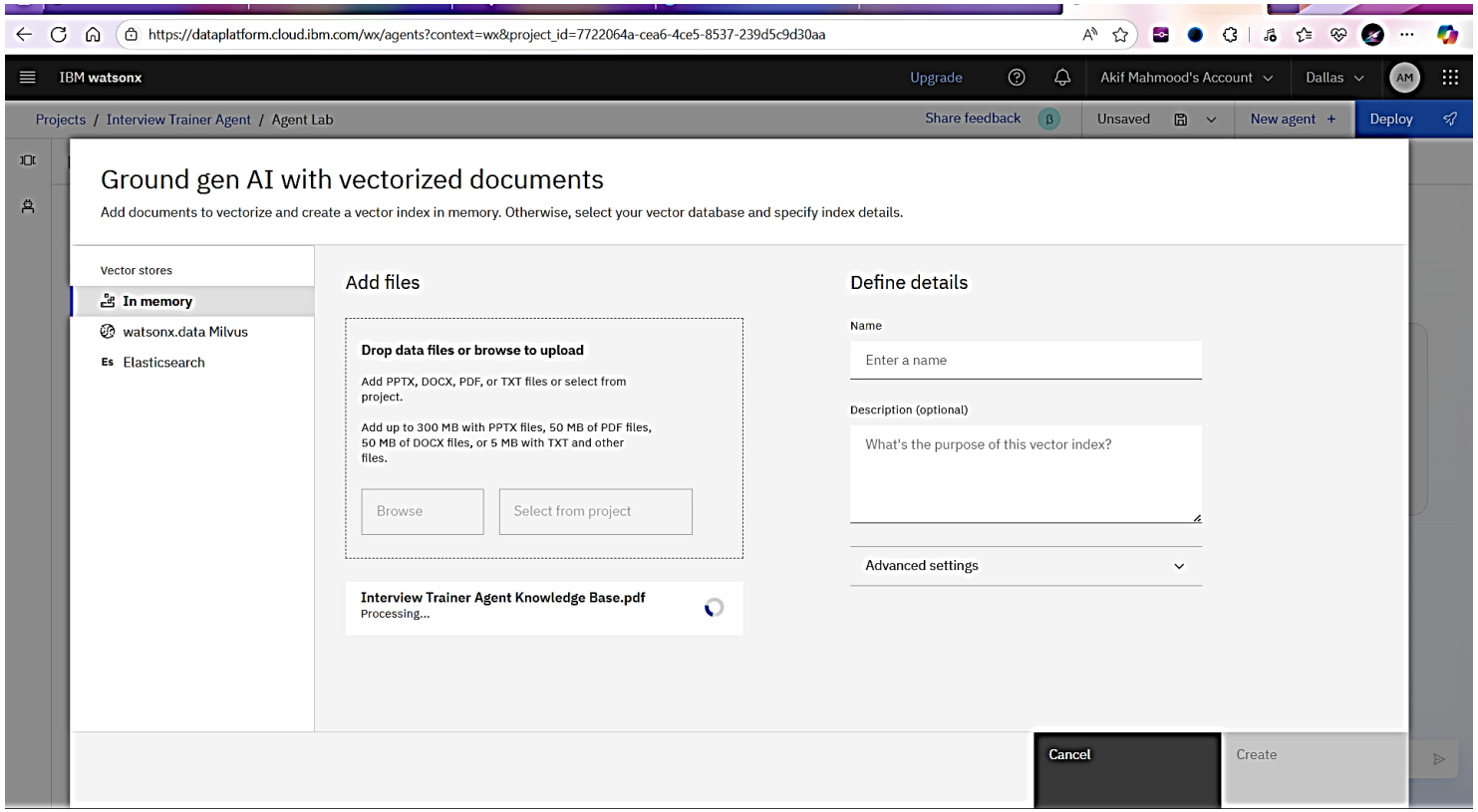
ALGORITHM & DEPLOYMENT

IBM Watsonx AI Agent: Select a foundation model from the dropdown that best suits the agent's task, such as a model from the IBM Granite family for instruction-following. In the Instructions section, define the agent's persona and how it should respond to user queries, setting clear guidelines for its behavior.



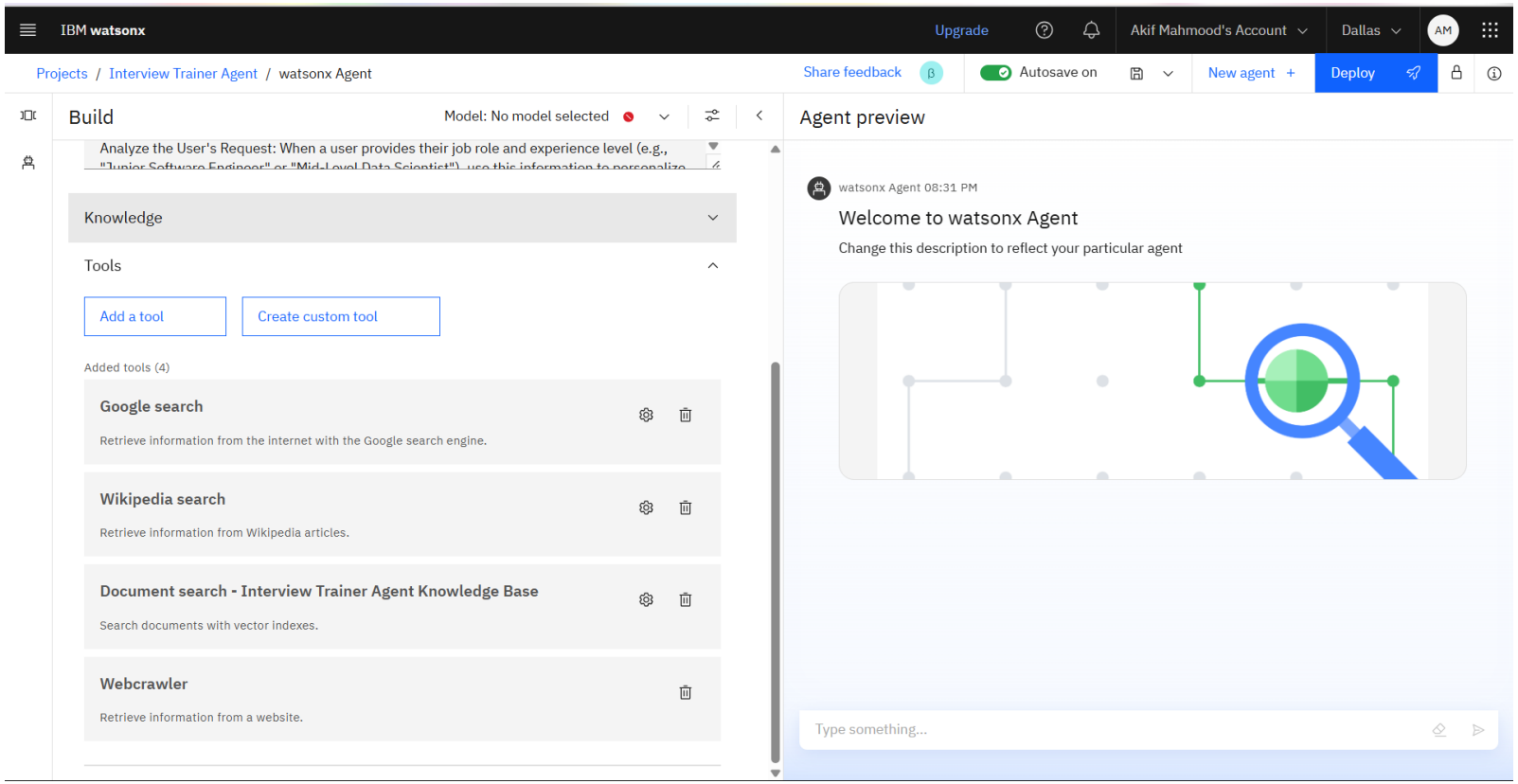
ALGORITHM & DEPLOYMENT

Next add the RAG document file: Upload your PDF or DOCX file to a vector index, which the agent will use as its knowledge base for RAG. This file provides the specific context and information needed to generate tailored answers for interview training.



ALGORITHM & DEPLOYMENT

Then add the necessary tools that the bot will use to answer the user quarry: Tools extend the agent's capabilities beyond its core knowledge base, allowing it to perform actions like searching the web or integrating with other services. For this project, you would add a search tool if the agent needed to look for information outside of your RAG document.



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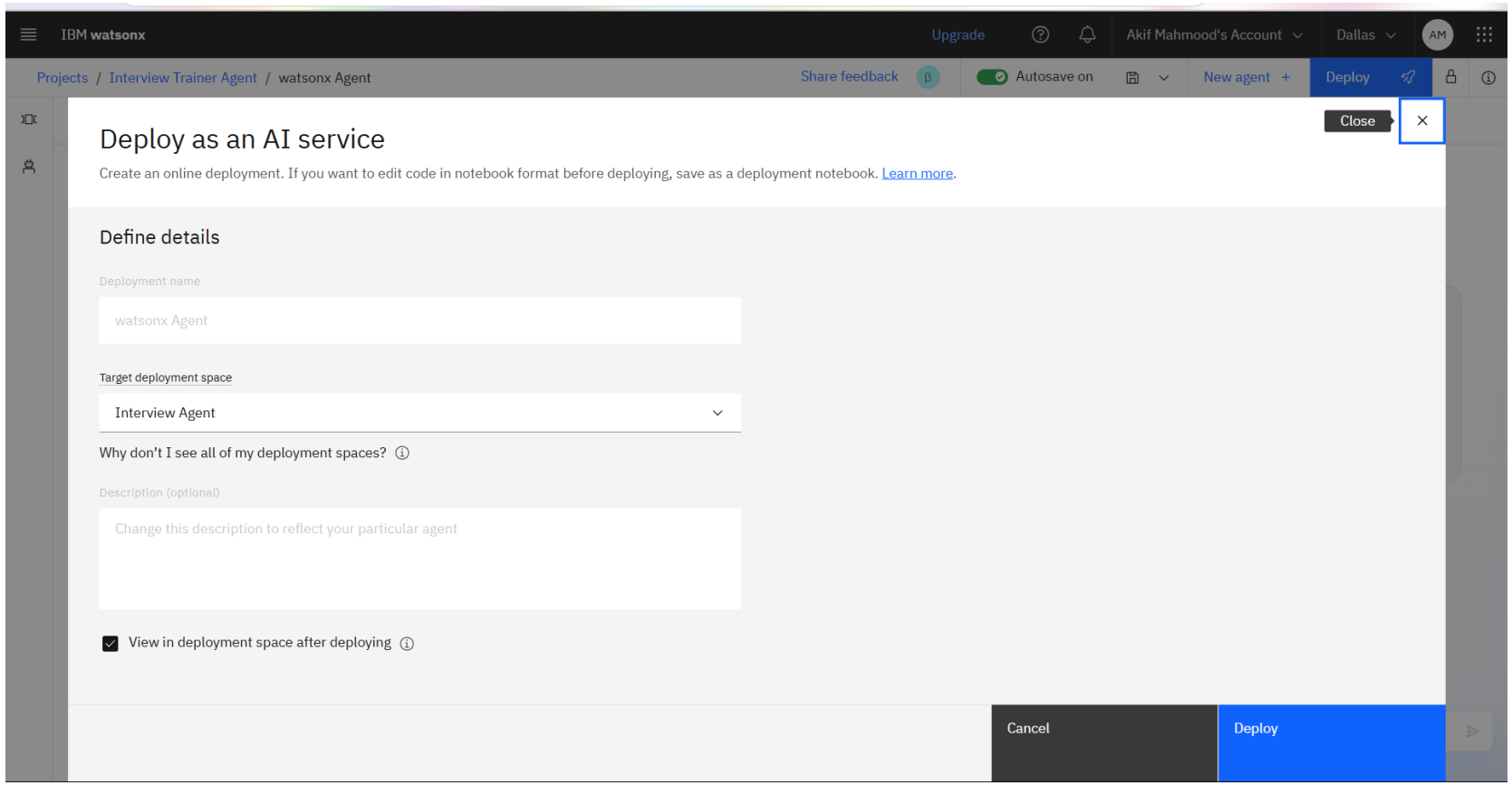
ALGORITHM & DEPLOYMENT

Deployment is the final and crucial step in making your Interview Trainer Agent available for use. Once you have built and tested the agent, you will deploy it to create an endpoint that can be integrated into an application.



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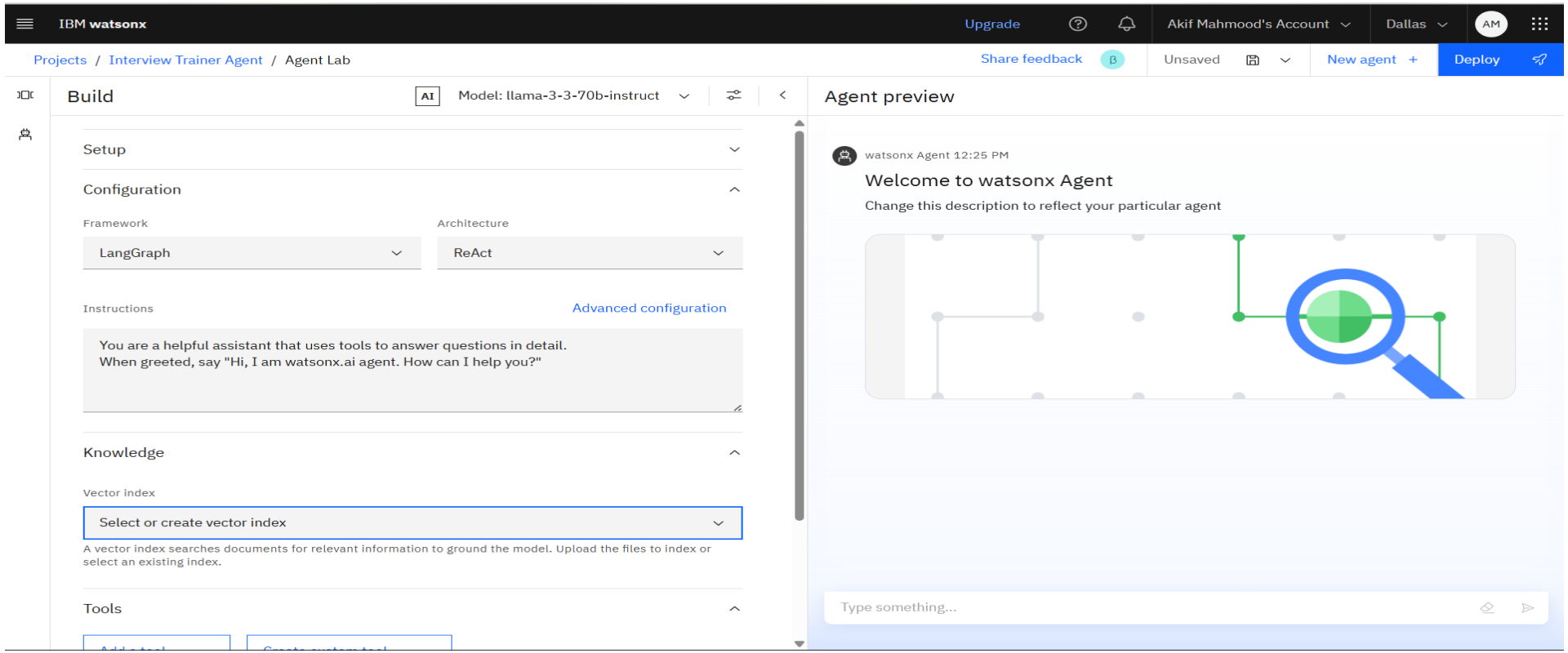
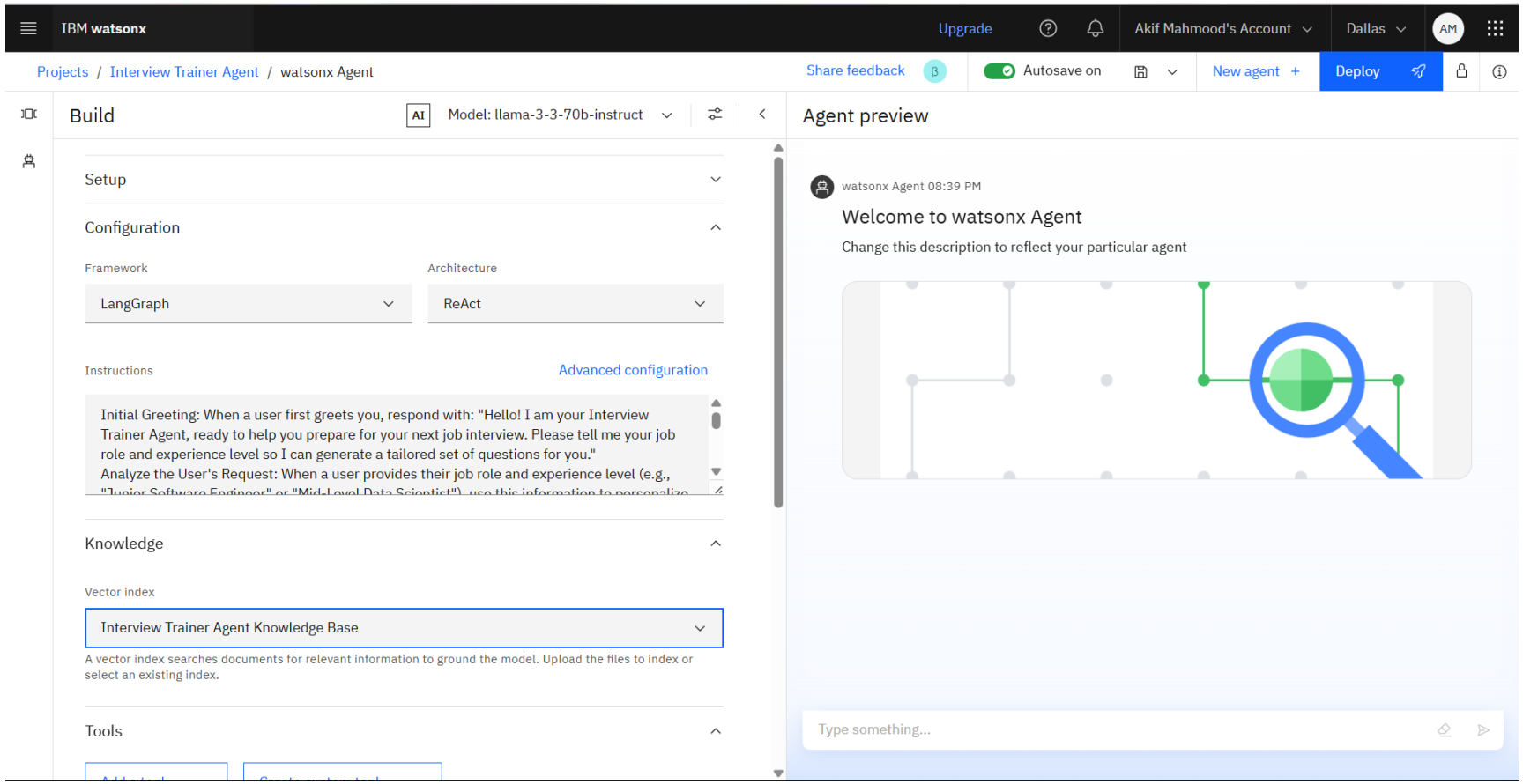
RESULT

- Initial Agent page



RESULT

- After adding *Instructions* and *Knowledge*



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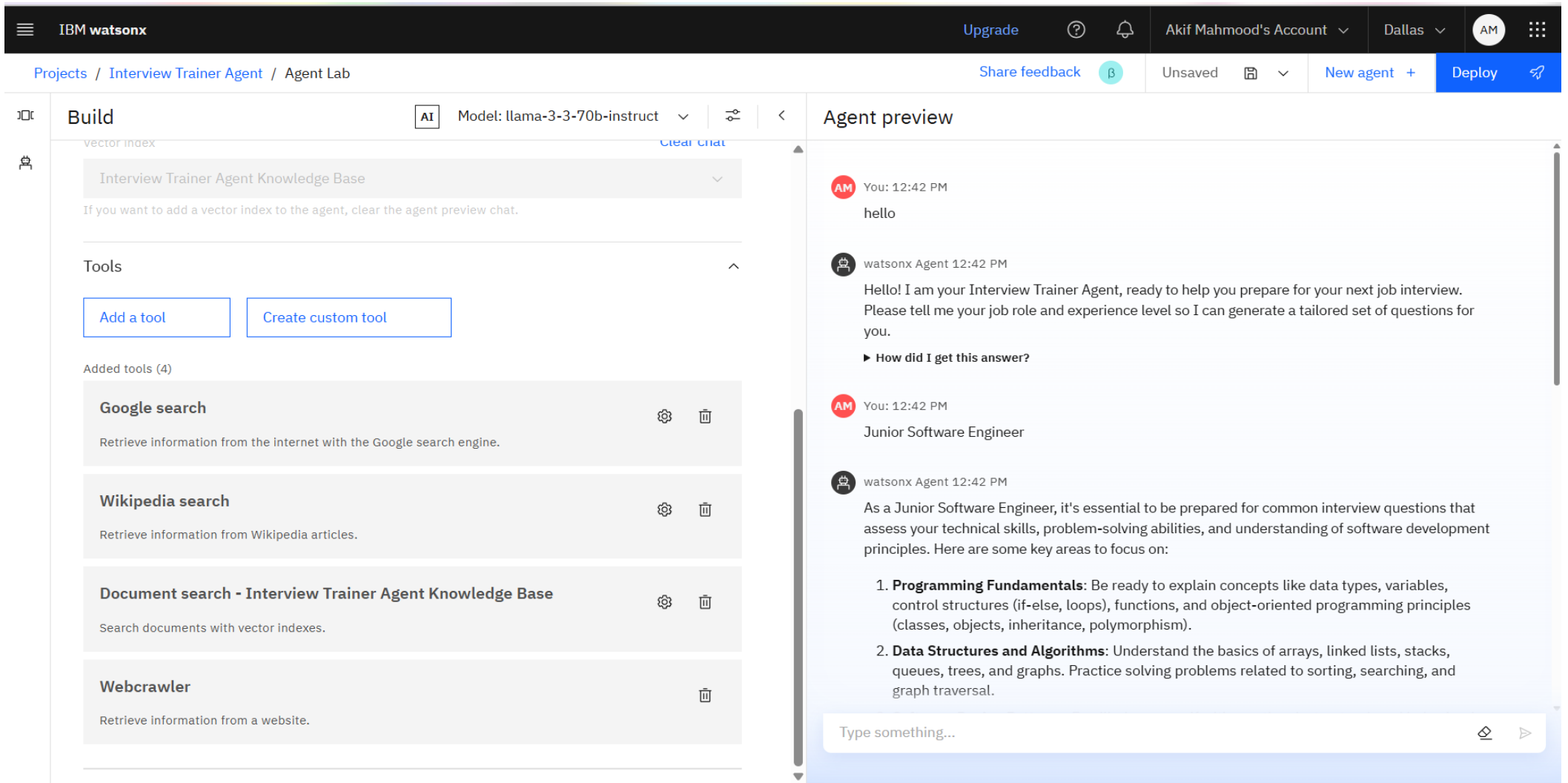
RESULT



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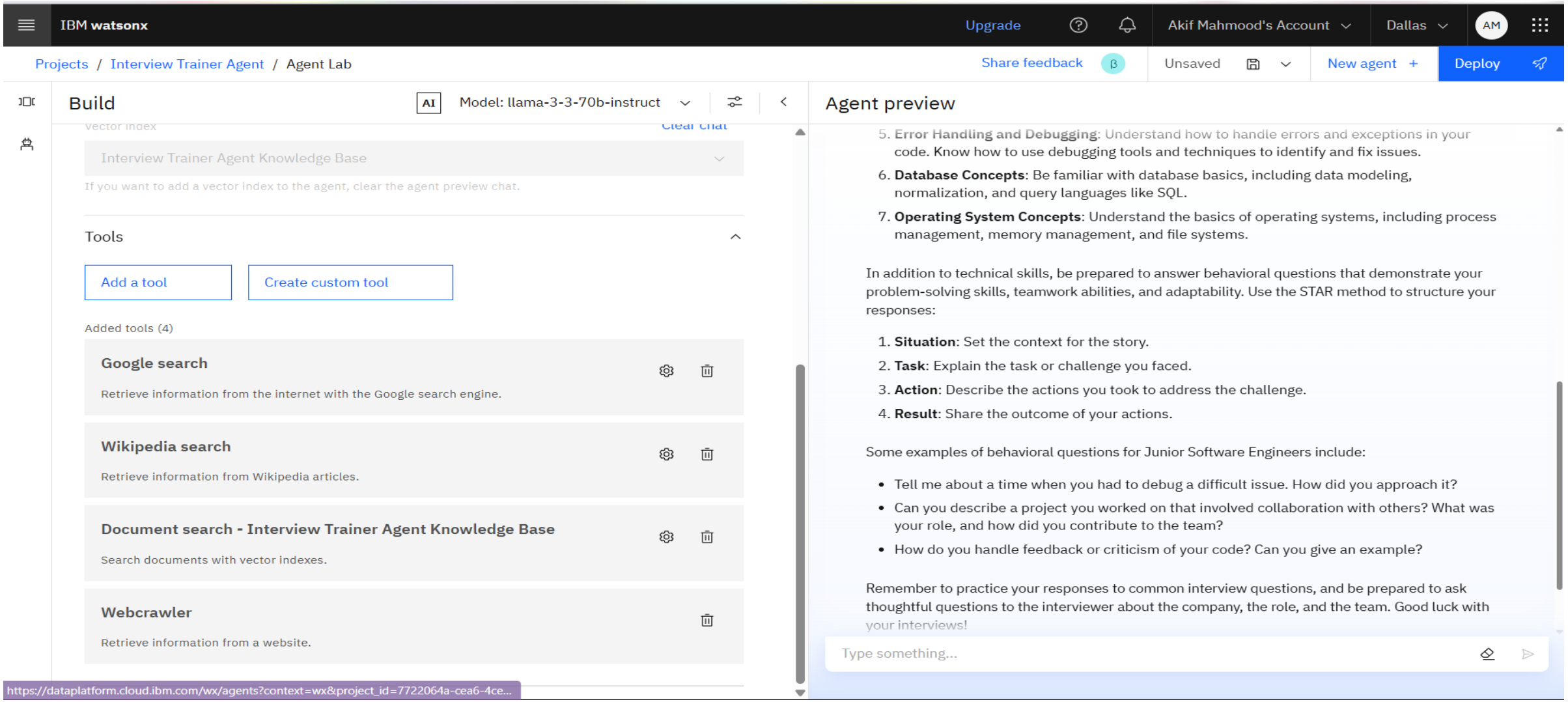
RESULT



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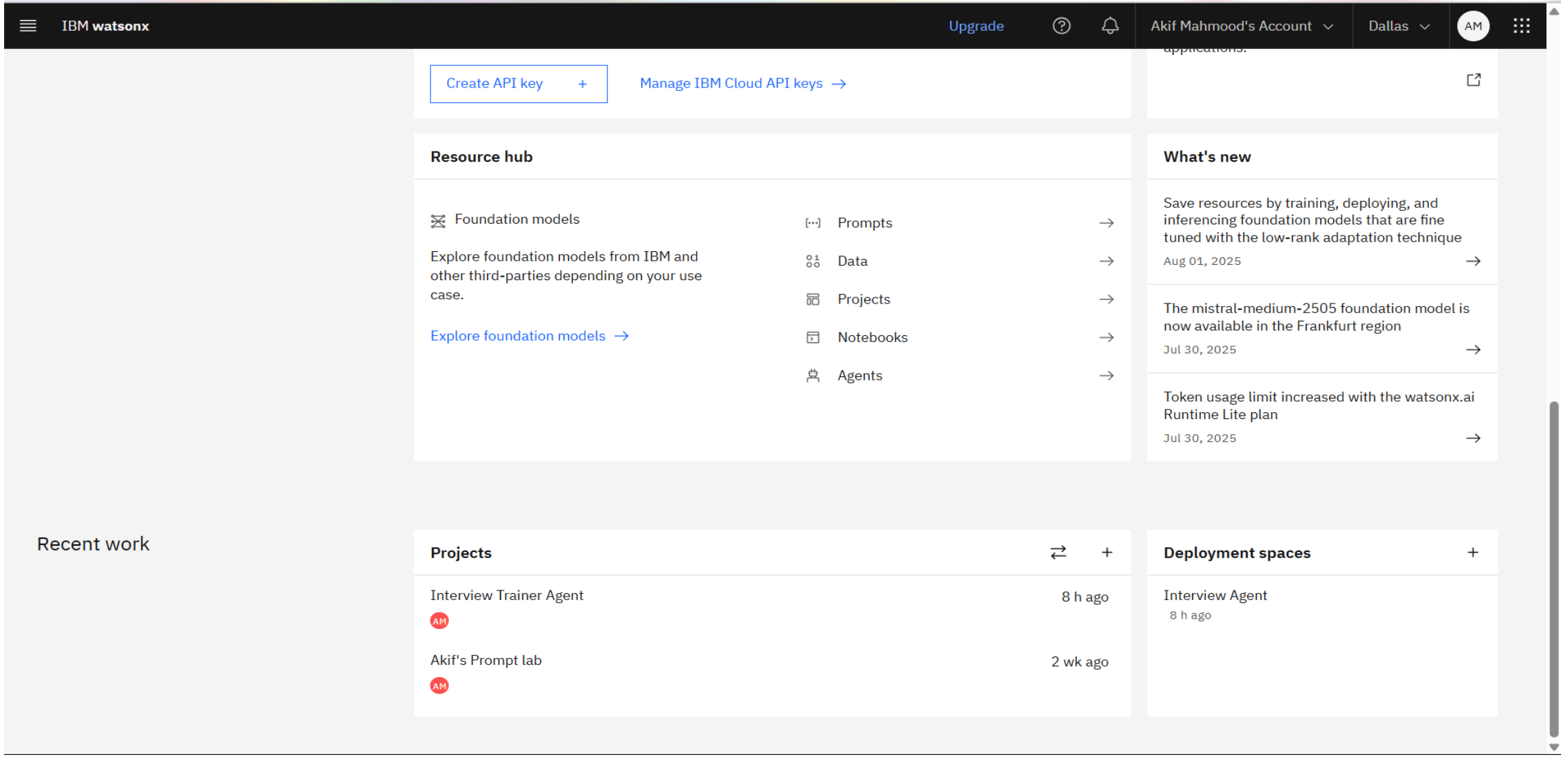
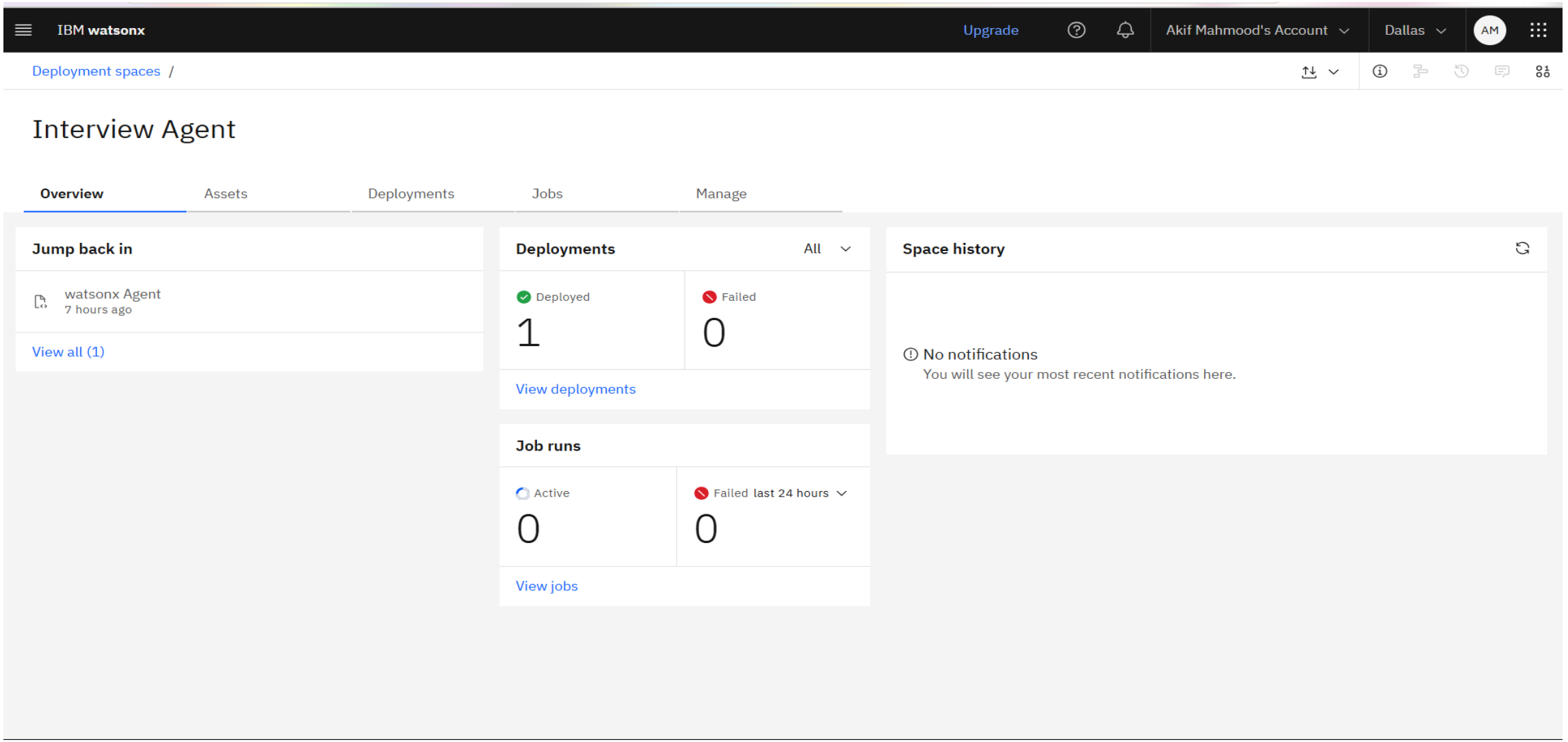
RESULT



RESULT



CONCLUSION

To summarize, we have successfully developed and implemented a Retrieval-Augmented Generation (RAG) agent using IBM's powerful watsonx platform and Granite models. This project demonstrates how a custom knowledge base can be seamlessly integrated with advanced AI to create a highly specialized and intelligent assistant. The resulting Interview Trainer Agent is not just a chatbot; it is a dynamic system that provides context-aware, accurate, and insightful guidance that goes beyond a standard LLM.

FUTURE SCOPE

- Looking ahead, this project lays a robust foundation for the future of AI-powered career development. This Interview Trainer Agent can be further enhanced with features such as real-time mock interviews, resume feedback, and integration with live job postings. The flexible architecture built on IBM Cloud services allows for continuous improvement and expansion, ensuring our agent remains a cutting-edge resource for job seekers in a competitive market.

REFERENCES

- IBM cloud Documentation

IBM CERTIFICATIONS

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In recognition of the commitment to achieve professional excellence

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Has successfully satisfied the requirements for:

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IBM **SkillsBuild** Completion Certificate

This certificate is presented to

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for the completion of

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(ALM-COURSE_3824998)

According to the Adobe Learning Manager system of record

Completion date: 24 Jul 2025 (GMT) **Learning hours:** 20 mins

THANK YOU

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