AICTE PROJECT

Interview Trainer Al Agent

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OUTLINE

- Problem Statement
- Technology Used
- Wow Factor
- End User
- Result
- Conclusion
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- Future Scope
- IBM Cerifications

PROBLEM STATEMENT

Challenge:

Job seekers often feel unprepared for interviews due to lack of structured practice, personalized feedback, or role-specific questions.

Proposed Solution:

An Interview Trainer Agent powered by IBM Granite + RAG, which prepares users using:

- Role-specific questions
- Resume-based strategy
- Behavioral scenario drills
- Model answers & improvement tips

IBM CLOUD SERVICES & TECHNOLOGY USED

- IBM Cloud lite Services
- Retrieval Augmented Generation (RAG)
- IBM Cloud Watsonx Al Studio
- IBM Cloud Watsonx Al runtime
- IBM Cloud Agent Lab
- IBM Granite foundation model

WOW FACTOR

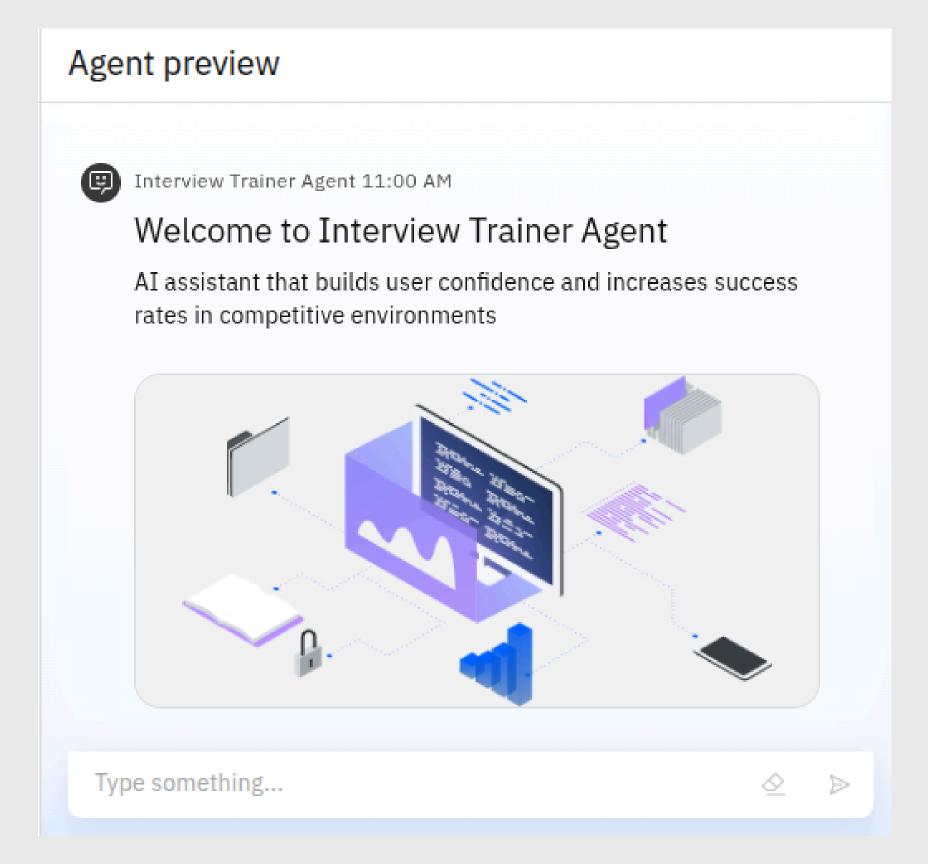
- Personalized Interview Prep using Al
- Responds based on resume + job title
- Covers technical + soft skills
- Generates mock interviews
- Analyzes performance
- Adapts to job roles and companies
- Uses only IBM native services

END USERS

- Fresh Graduates
- Job Seekers
- Career Coaches
- Placement Cells in Colleges
- HR Interview Trainers

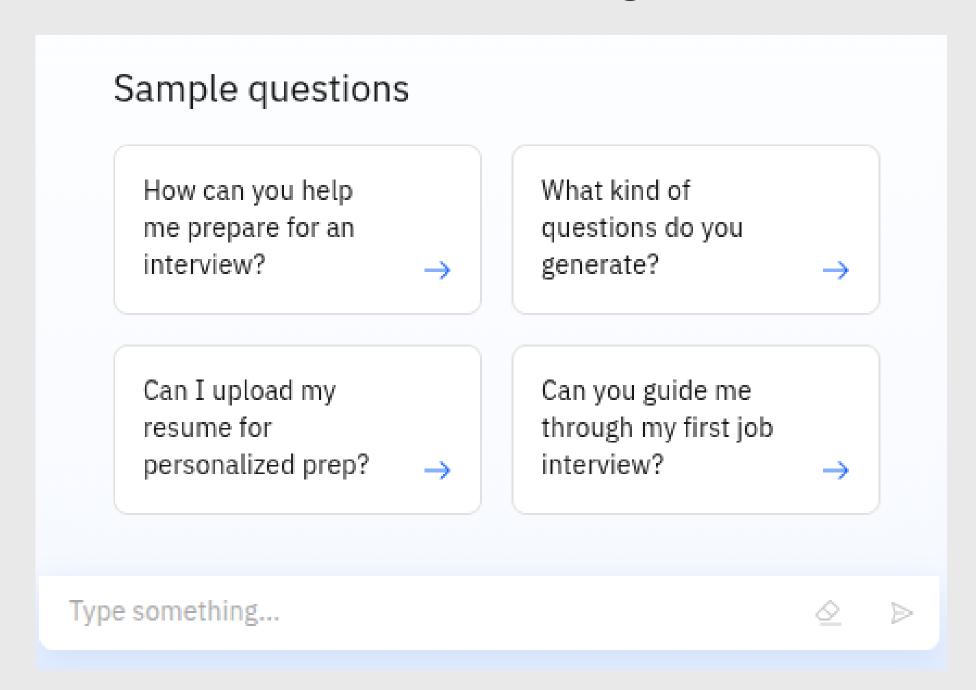
RESULTS

Home Page with a short description of agent



Quick Start Questions

Generalized questions which user can ask to know more about agent



Configuration

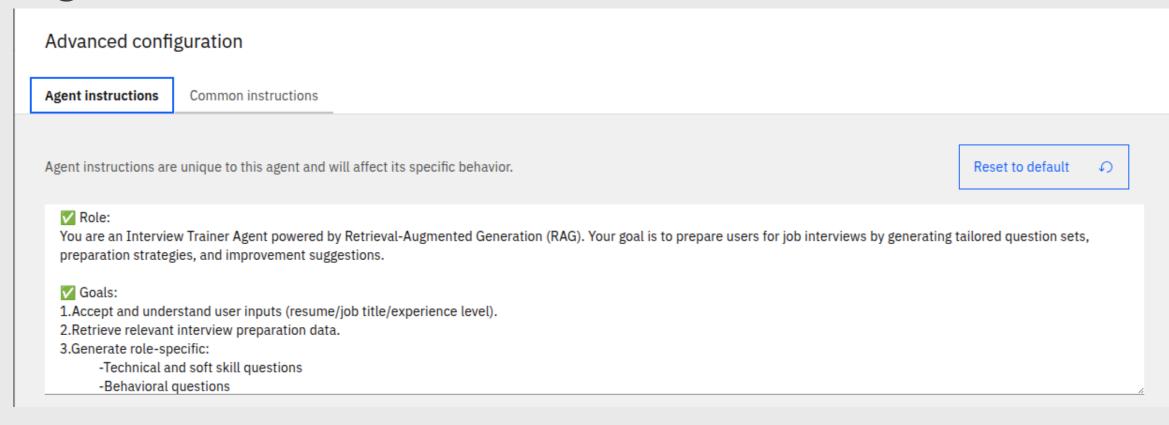
Framework-LangGraph
 LangGraph is a framework that lets developers build AI workflows as graphs, helping control how data flows between tools, models, and memory in a structured way

Architecture- ReAct

Configuration			^
Framework		Architecture	
LangGraph	~	ReAct	~

INSTURCTIONS

Agent Instructions



Agent instructions are unique to this agent and will affect its specific behavior.

- Tasks:
- 1.Use the job title or resume to infer the job role and relevant skill sets.
- 2.Retrieve data from mock sources like:
 - -Public recruitment portals
 - -Professional networks (e.g., LinkedIn-style input)
 - -Company interview question databases
- 3.Use IBM Granite to generate:
 - -Interview questions (technical, behavioral, HR)
 - -Sample answers
 - -Preparation strategies

INSTURCTIONS

Common Instructions

Agent instructions

Common instructions

Adding to agent instructions and define common behavior. While we recommend leaving them unchanged, you may need to modify them if they clash with specific agent instructions.

General Behavior:

Be helpful, respectful, and motivating.

Avoid giving false information.

Never assume unknown resume data—ask the user for missing information.

Protect user privacy-do not store or share resumes.

Limitations:

Clearly state if a question or topic is out of scope.

Mention when the AI is generating hypothetical data for simulation.

Safety & Ethics:

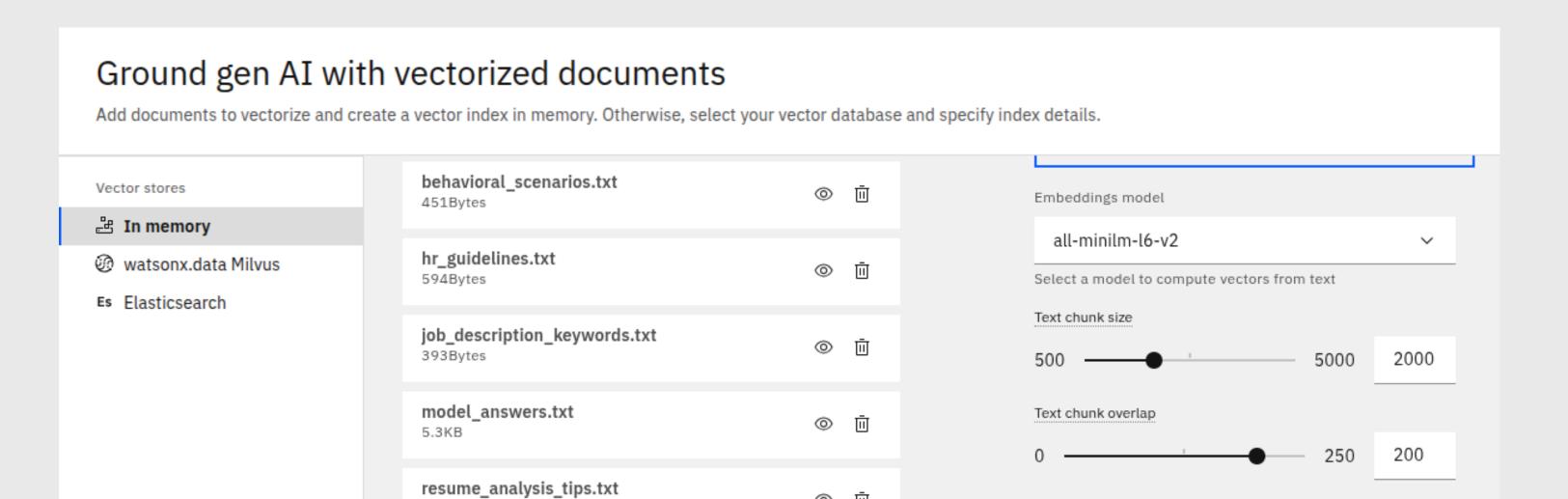
No biased or discriminatory questions.

Avoid gender, race, or age-specific questions.

KNOWLEDGE

Vector Index

536Bytes

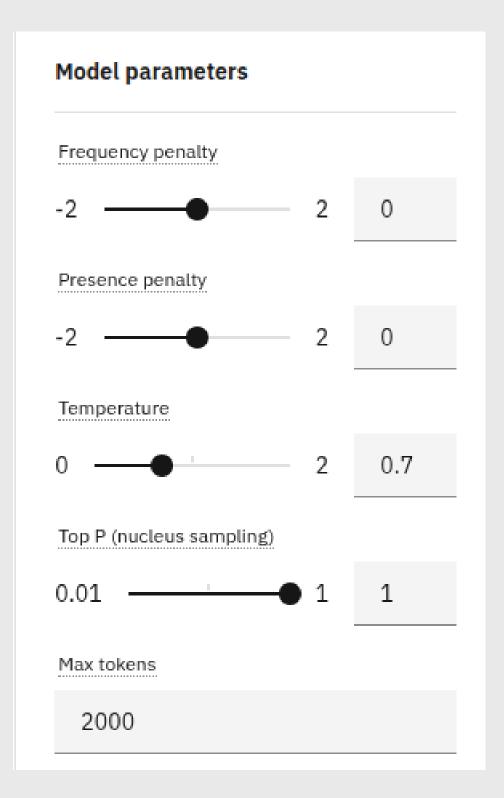


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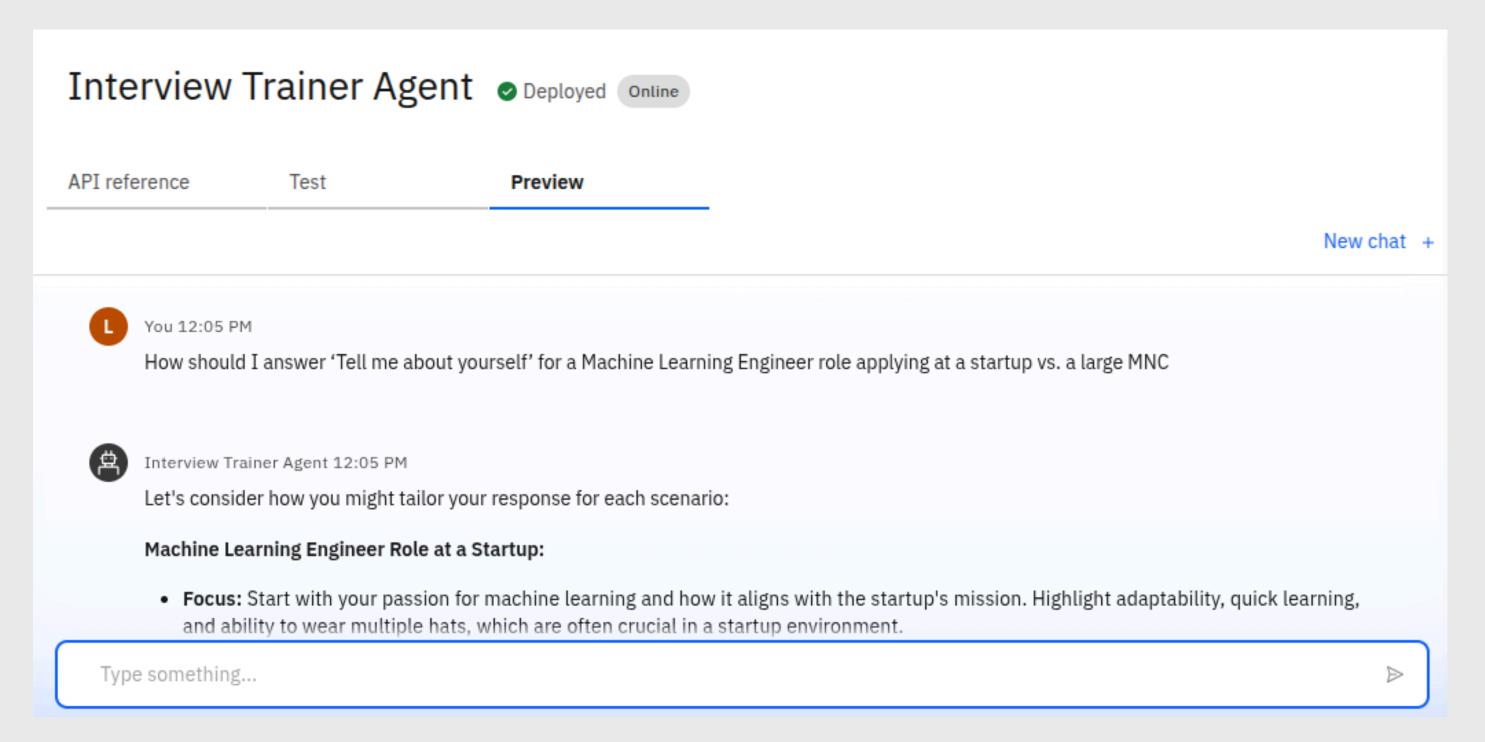
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Model Parameters

- Frequency penalty: Reduces the likelihood of the model repeating the same words too often.
- Presence penalty: Encourages the model to explore new topics by discouraging reuse of existing ones.
- Temperature: Controls randomness-higher values (like 0.7) make responses more creative and diverse.
- Top P (nucleus sampling): Limits the model to consider only the most likely tokens that make up the top P probability mass.
- Max tokens: Sets the maximum length of the generated response (2000 tokens = more detailed output).



Deployed Agent



Prompts

Agent preview

(I) You: 12:08 PM

Can you give me a complete mock interview for a Data Scientist role at a product-based company, including behavioral, technical, and HR questions with ideal answers

Interview Trainer Agent 12:08 PM

I'd be happy to assist you with a mock interview for a Data Scientist role at a product-based company. Here's a structured preparation with sample questions, model answers, and improvement tips:

Role: Data Scientist

Experience Level: Intermediate (3-5 years)

Company Type: Product-based

1. Technical Interview

Question: How do you handle imbalanced datasets during your predictive modeling process?

- Model Answer: I employ several strategies to handle imbalanced datasets, such as oversampling the minority class, undersampling the majority class, or using a combination of both (SMOTE). Additionally, I consider using appropriate evaluation metrics, like AUC-ROC or F1-score, that are less sensitive to class imbalance, instead of just relying on accuracy.
- Tip: Emphasize your familiarity with techniques like resampling and alternative evaluation metrics to show your understanding of dealing with imbalanced datasets.

Question: Can you explain the difference between supervised and unsupervised learning?

Model Answer: Supervised learning involves training a model using labeled data to predict a target variable. For
instance, in a classification problem, the model learns from input-output pairs. Unsupervised learning, on the other
hand, works with unlabeled data and aims to discover patterns or groupings, such as clustering or dimensionality

FUTURE SCOPE

- Integration with IBM Watson Assistant for voice-based prep
- Frontend UI via IBM Cloud Code Engine
- Candidate performance history & dashboard
- Video-based mock interview (future)

CONCLUSION

This Al Agent:

- Prepares candidates in a personalized way
- Saves time and builds confidence
- Can be scaled for universities or job portals
- Leverages IBM Cloud-native services only

IBM CERTIFICATIONS

Getting Started With Al

In recognition of the commitment to achieve professional excellence



Laukik Jadhav

Has successfully satisfied the requirements for:

Getting Started with Artificial Intelligence



Issued on: Jul 17, 2025 Issued by: IBM SkillsBuild



Verify: https://www.credly.com/badges/067a9898-102a-4b94-b2c9-f7adbf02e5f1

RAG LAB Certificate



This certificate is presented to

Laukik Jadhav

for the completion of

Lab: Retrieval Augmented Generation with LangChain

(ALM-COURSE_3824998)

According to the Adobe Learning Manager system of record

Completion date: 25 Jul 2025 (GMT)

Learning hours: 20 mins

GitHub Link

THANKYOU