

CAPSTONE PROJECT

INTERVIEW TRAINER AGENT

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OUTLINE

- Problem Statement
- Technology used
- Wow factor
- End users
- Result
- Conclusion
- Git-hub Link
- Future scope
- IBM Certifications

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:

We propose an **AI-powered Interview Trainer Agent** using **RAG** to deliver personalized mock interviews. It fetches real-time, role-specific questions and strategies from trusted sources, evaluates user responses, and offers targeted feedback. This system enhances readiness by simulating realistic interviews, improving both technical and behavioral skills, and boosting selection chances.

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

- Uses **Retrieval-Augmented Generation (RAG)** for real-time, relevant question generation
- Tailors mock interviews based on **user profile, resume, and job role**
- Retrieves questions and expectations from **recruitment portals, company databases, and professional networks**
- Covers both **technical knowledge** and **soft skills/HR scenarios**
- Adapts **question difficulty** dynamically based on user performance
- Provides **instant feedback, confidence scores**, and actionable improvement tips
- Supports **multilingual interaction**
- Simulates full **HR, technical, and behavioral** interview rounds
- Boosts user confidence and job-readiness—**no human trainer required**
- Designed to increase **success rates in competitive hiring environments**

END USERS

- **Students & Job Seekers**

- For self-paced interview preparation across technical, HR, and behavioral rounds
 - Helpful for campus placement, internships, and fresher-level job roles

- **Educational Institutions & Training Centers**

- Can be deployed as a **digital mock interview lab**
 - Supports career services, T&P departments, and skill-based training modules

- **Government Skill Development Programs**

- Ideal for schemes like **PMKVY, NULM, NSDC**, etc.
 - Helps learners become **job-ready through AI-based interview simulation**

- **Career Counselors & Placement Coaches**

- Enables career advisors to assess student readiness across different job roles
 - Useful in **role-matching and interview practice** for undecided candid

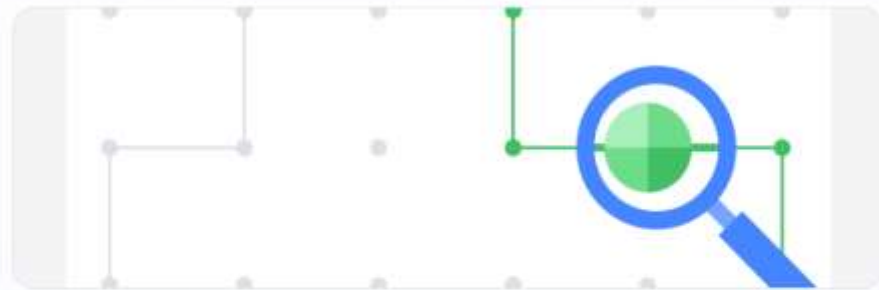
RESULTS

Agent preview

Interview Trainer AI Agent 09:34 PM

Welcome to Interview Trainer AI Agent

Practice job interviews, get evaluated, and improve your confidence, communication.



What is the virtual DOM and how does it work?

Agent preview

NA You: 09:34 PM

What is the virtual DOM and how does it work?

Interview Trainer AI Agent 09:34 PM

The virtual DOM is a programming concept in which a "virtual" representation of a user interface is preserved in memory and synced with the "real" DOM. It allows React to manage changes more efficiently by minimizing the direct manipulation required on the real DOM. The virtual DOM is a lightweight copy of the real DOM that enables React to update user interfaces by calculating the minimal set of changes needed to update the UI. It speeds up the performance of a website significantly and improves app performance, especially for complex applications.

Some key points about the virtual DOM include:

- It is an in-memory representation of the actual DOM.
- It allows React to track changes in the UI and update the real DOM efficiently.
- It minimizes the direct manipulation required on the real DOM.
- It improves app performance, especially for complex applications.
- It is a lightweight copy of the real DOM.

Overall, the virtual DOM is a powerful tool that enables React to manage changes to the UI efficiently and improve app performance.

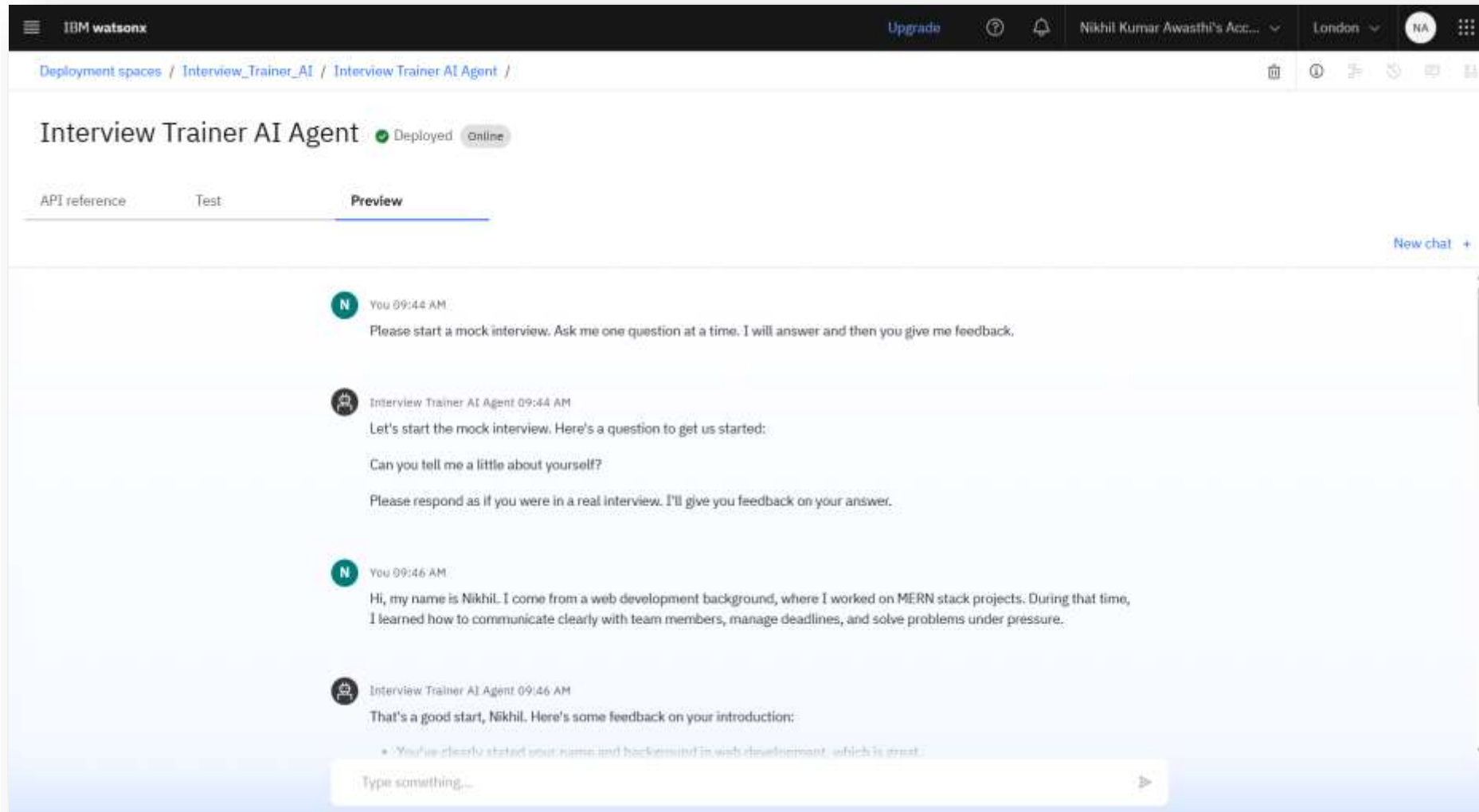
► How did I get this answer?



Type something...

RESULTS

Deployed AI Agent



RESULTS

IBM watsonx Upgrade ? ⓘ Nikhil Kumar Awasthi's Acc... London NA

Deployment spaces / Interview_Trainer_AI / Interview Trainer AI Agent /

Interview Trainer AI Agent ✓ Deployed Online

API reference Test **Preview**

[New chat +](#)

Interview Trainer AI Agent 09:46 AM

That's a good start, Nikhil. Here's some feedback on your introduction:

- You've clearly stated your name and background in web development, which is great.
- You've also highlighted some valuable skills you've learned, such as communication, deadline management, and problem-solving under pressure.
- However, it would be good to expand a bit more on your experience and what you're looking for in a role. For example, you could mention what specific technologies you've worked with, what kind of projects you've enjoyed working on, and what your long-term career goals are.
- Additionally, try to use a more conversational tone and avoid sounding too rehearsed. Remember, the goal of an interview is to have a conversation with the interviewer, not just to recite a scripted answer.

Here's an example of how you could expand on your introduction:

"I'm Nikhil, and I come from a web development background, where I've had the opportunity to work on several MERN stack projects. I've really enjoyed learning about the latest technologies and frameworks, and I'm excited to continue growing as a developer. In my previous role, I've learned the importance of clear communication with team members, managing deadlines, and solving problems under pressure. I'm looking for a role where I can apply these skills and continue to learn and grow as a professional. I'm particularly interested in working on projects that involve [specific technology or industry], and I'm excited to learn more about the opportunities available here."

Now, let's move on to the next question:

Type something...

RESULTS

The screenshot displays the IBM Watsonx interface for the 'Interview Trainer AI Agent'. The top navigation bar includes the IBM Watsonx logo, an 'Upgrade' button, a help icon, a notification bell, and user account information for 'Nikhil Kumar Awasthi's Acc...'. The breadcrumb trail shows the path: 'Deployment spaces / Interview_Trainer_AI / Interview Trainer AI Agent'. Below the breadcrumb, the agent's name 'Interview Trainer AI Agent' is shown with a green 'Deployed' status and an 'Online' label. A tabbed interface at the bottom of the header includes 'API reference', 'Test', and 'Preview', with 'Preview' being the active tab. A 'New chat +' button is located on the right side of the chat area. The chat history shows a user message at 09:47 AM asking about motivation in the tech industry, followed by an AI response at the same time providing feedback and an example of a more detailed answer. The AI response includes a bulleted list of suggestions and a paragraph example. At the bottom, there is a text input field with the placeholder 'Type something...' and a send button.

IBM watsonx Upgrade ?

Deployment spaces / Interview_Trainer_AI / Interview Trainer AI Agent

Nikhil Kumar Awasthi's Acc... London NA

Interview Trainer AI Agent Deployed Online

API reference Test **Preview**

New chat +

N You 09:47 AM

What really motivates me to work in the tech industry is the constant innovation and the chance to solve real-world problems using technology.

Interview Trainer AI Agent 09:47 AM

That's a great motivation to have, Nikhil. Here's some feedback on your answer:

- You've identified a key aspect of the tech industry that motivates many people: the constant innovation and the opportunity to solve real-world problems.
- Your answer is concise and to the point, which is good. However, it would be even stronger if you could provide a specific example of a problem you're passionate about solving, or a particular area of technology that interests you.
- Additionally, try to use more dynamic language to convey your enthusiasm and passion for the industry. Instead of saying "what really motivates me," you could say "I'm driven by" or "I'm excited about the opportunity to."

Here's an example of how you could expand on your answer:

"I'm driven by the constant innovation in the tech industry and the chance to solve real-world problems using technology. For example, I'm really interested in using machine learning to improve healthcare outcomes, or using cloud computing to reduce carbon emissions. I believe that technology has the power to transform people's lives, and I'm excited about the opportunity to be a part of that transformation."

Type something...

CONCLUSION

- The Interview Trainer Agent leverages RAG (Retrieval-Augmented Generation) to deliver an intelligent, context-aware interview preparation experience. By combining AI-generated insights with real-time retrieval from trusted recruitment platforms and industry datasets, it equips users with tailored questions, model answers, and strategic feedback. Whether it's a fresher aiming for campus placement or a working professional preparing for a role switch, the agent ensures role-specific, adaptive preparation.
- It not only enhances technical and behavioral readiness but also builds user confidence and communication skills. This makes it a powerful tool for students, institutions, training centers, and hiring teams — truly transforming interview readiness into a guided, AI-driven journey.

FUTURE SCOPE

- Multilingual Interview Preparation**

Support for regional and global languages to help diverse users.

- Voice-Based Interview Simulation**

Real-time voice interaction for mock interviews with feedback.

- Integration with Job Portals**

Direct syncing with LinkedIn, Naukri, etc., for personalized questions.

- Real-Time Feedback and Scoring**

On-the-spot AI-based feedback on answers and delivery style.

- Domain-Specific Knowledge Packs**

Tailored modules for IT, Finance, Healthcare, etc.

- AI-Powered Resume Analysis**

Automated resume parsing with improvement suggestions.

- Interview Analytics Dashboard**

Track progress, strengths, and areas needing improvement.

- Collaboration with Training Institutes**

Integrate into coaching centers and university career cells.

IBM CERTIFICATIONS





GITHUB LINK

Git hub link : [Interview-Trainer-AI-Agent](#)

THANK YOU ✨