

# CAPSTONE PROJECT

## Interview Trainer Agent

**Presented By:**

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**DEPARTMENT - Artificial Intelligence and Machine Learning**

**GITHUB REPOSITORY -**

**[https://github.com/suyashbelhekar/IBMcloud\\_projects](https://github.com/suyashbelhekar/IBMcloud_projects)**

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# OUTLINE

**Problem Statement**

**Proposed System/Solution**

**System Development Approach**

**Result**

**Conclusion**

**Future Scope**

**References**

# PROBLEM STATEMENT

In today's competitive job market, candidates often struggle to prepare effectively for interviews due to limited access to personalized guidance and realistic practice environments. Traditional preparation methods, such as reading interview question banks, attending coaching classes, or relying on peer feedback, fail to provide adaptive, real-time, and interactive training experiences.

There is a pressing need for an intelligent system that can simulate a real interview environment, assess candidate performance, and provide constructive feedback. Such a system should be capable of dynamically generating interview questions based on job role, domain knowledge, and difficulty level. It should also evaluate candidate responses for clarity, relevance, confidence, and communication skills.

# PROPOSED SOLUTION

The proposed system aims to address the challenge of effective interview preparation by developing an AI-powered Interview Trainer Agent (chatbot) that simulates real interview environments and provides personalized feedback. The agent will act as a virtual interviewer,

## 1. Conversation Module-

The chatbot will conduct interactive interview sessions in real-time.

It will ask domain-specific, HR, or behavioral questions depending on the candidate's chosen field.

Adaptive questioning will be used, where follow-up questions are generated based on the candidate's previous responses.

## 2. Knowledge Base

The agent will be equipped with a structured repository of interview questions categorized by role, domain, and difficulty level.

It will also include situational and behavioral questions to simulate real-world HR interactions.

## 3. Response Handling

The chatbot will process user responses (text or voice, depending on implementation).

It will evaluate the clarity, completeness, and relevance of responses using predefined evaluation criteria.

# CONTI...

## 4. Feedback & Guidance

At the end of each session, the agent will provide structured feedback, highlighting strengths and weaknesses.

It will offer suggestions for improving technical answers, communication skills, and overall presentation.

The system will also track the candidate's progress over multiple sessions.

## 5. User Interface

A simple and user-friendly interface (web or mobile app) will allow candidates to start interview sessions, select job roles, and view feedback reports.

Candidates can choose the type of interview (HR, technical, or mixed).

## 6. Deployment

The chatbot will be deployed on a scalable platform (e.g., web application, mobile app, or integrated with messaging platforms).

It will ensure accessibility, responsiveness, and data privacy for users.

# CONTI....

## 7. Evaluation

The system's performance will be evaluated based on user satisfaction, accuracy of feedback, and candidate improvement over time.

Continuous refinement will be made by incorporating user feedback and updating the knowledge base.

## 8. Result

The Interview Trainer Agent will serve as a virtual interview coach, enabling candidates to practice interviews in a realistic environment, receive constructive feedback, and build confidence before facing real-world interviews.

# SYSTEM APPROACH

## System Requirements

### Hardware Requirements:

Windows-based PC/Laptop with minimum 4GB RAM and dual-core processor.

Stable internet connection for accessing IBM Cloud services.

Optional microphone and webcam for voice-based interview practice.

### Software Requirements:

Operating System: Windows 10 or later

IBM Cloud Account (for chatbot deployment and NLP services)

Web Browser (Chrome/Edge/Firefox) for accessing the agent

Database: IBM Cloudant (for storing user logs, sessions, and progress reports)

# TOOLS

## 2. Tools and Services Required

IBM Watson Assistant / IBM Granite NLP → For creating the Interview Trainer chatbot.

IBM Speech-to-Text & Text-to-Speech (optional) → For voice-based interview simulation.

IBM Cloud Functions → For handling backend logic and dynamic responses.

IBM Cloudant → To store candidate profiles, responses, and feedback history.

Frontend (Optional): Simple web UI built using React/HTML for user interaction.



# RESULT

IBM Cloud

Search resources and products...

Catalog

Manage

Suyash Belhekar's Acco...

?

Dashboard

Edit dashboard

Upgrade account

Create resource

For you

Select an option

Build

Explore IBM Cloud with this selection of easy starter tutorials and services.

Track emissions with Carbon Calculator

View estimated greenhouse gas emissions for your IBM Cloud account and export data for ESG reporting.

Recommended1 min

Use Watson Assistant

Watson Assistant lets you build conversational interfaces into any application, device, or channel.

Popular2 min

Use Watson Studio

Watson Studio provides a suite of tools and a collaborative environment for data scientists, developers and domain experts.

Popular2 min

Build with Watson

Chatbots, insights, recognizers, and more. Explore the AI platform for business.

Popular3 min

Retrieval Augmented Generation (RAG) Pattern

Create a secure and trustworthy deployment of generative AI applications on IBM Cloud.

Recommended2 min

IBM Cloud status

View all

Recent support cases

View all

You can view a summary of your support

Planned maintenance

View all

Total emissions

View all

Emissions (kgCO<sub>2</sub>e)

No available data. Check that your service is

 Find information

Overview

Planning an AI solution

Getting started and tutorials

Gen AI solutions

Projects

Preparing data

Data science solutions

Deploying AI

Governing AI

Administration

Glossary

# Documentation for IBM watsonx as a Service

Last updated: Jul 05, 2025

IBM watsonx as a Service is an experience where you build, deploy, and govern AI solutions with watsonx.ai and watsonx.governance.

To sign up or try a demo of watsonx.ai, go to the [watsonx.ai product page](#). If you are looking for watsonx.data, see [IBM watsonx.data documentation](#).

Developer Hub



Foundation models



AI agents



What's new

Quick start tutorials

AI risk atlas

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Accept all

More options

## Create a project

Start with a new, blank project or select from where to import an existing project.

+ New

🖨 Local file

📁 Sample

### Define details

Name

Interview Trainer Agent

Description (optional)

this is project for Interview Agent

Tags (optional)

Add tags

Add tags to make projects easier to find. To add tags, separate them with commas and press Enter.

Storage

Cloud Object Storage-rs

Project includes integration with [Cloud Object Storage](#) for storing project assets.

Advanced settings ▾

Cancel

Create

IBM watsonx

Upgrade ? Bell

Suyash Belhekar's Account Dallas SB

Projects / Interview Trainer Agent

Over

Associate service

Ch

Project

Settings G

Assets A

Environments E

Resources R

Services S

Tools

Partners P

watsonx.ai Runtime

Author: IBM • Date of last update: Jul 23, 2025 • Docs • API Docs

Create About

Select a region

Select a region

Dallas

Pricing plan

Displayed prices do not include tax. Monthly prices shown are for country or region: United States

Plan	Features	Pricing
Lite	<b>Service instance</b> Instance includes: <ul style="list-style-type: none"><li>• 20 capacity unit-hours (CUH) per month</li><li>• 50,000 tokens/data points per month</li></ul>	Free

Summary

**watsonx.ai Runtime**  
Region: Dallas  
Plan: Lite  
Service name: watsonx.ai Runtime-qu  
Resource group: Default

Create

View terms

Cancel

IBM watsonx

Upgrade ⓘ 🔔 Suyash Belhekar's Account ▾ Dallas ▾ SB

Projects / Interview Trainer Agent / Agent Lab

Share feedback β Unsaved 📁 ▾ New agent + Deploy 🚀

Build

AI Model: mistral-large ⚠️ ▾ ⚙️ <

Configuration

Framework

LangGraph ▾

Architecture

ReAct ▾

Instructions

Advanced configuration

You are a helpful assistant that uses tools to answer questions in detail.  
When greeted, say "Hi, I am watsonx.ai agent. How can I help you?"

Knowledge

▾

Tools

▾

Add a tool

Create custom tool

Added tools (1)

Google search

⚙️ 🗑️

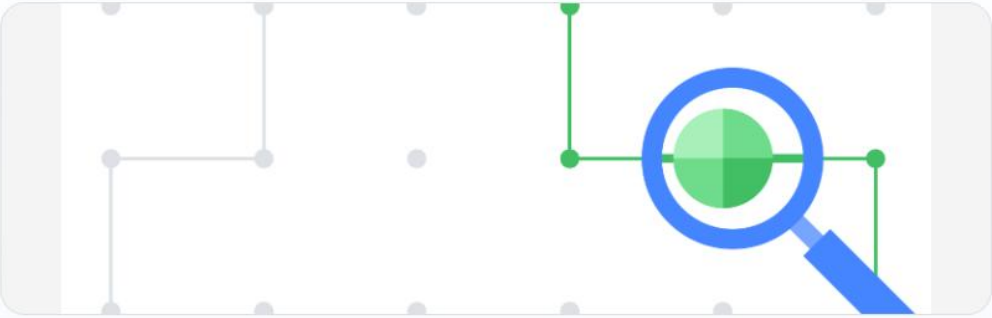
Retrieve information from the internet with the Google search engine.

Agent preview

watsonx Agent 09:50 PM

Welcome to watsonx Agent

Change this description to reflect your particular agent



Type something...

🗨️ ▶️

Build

AI Model: mistral-large ⚠️

Setup

Configuration

Framework Architecture

LangGraph ReAct

Instructions

You are a helpful assistant that uses tools to answer questions in detail. When greeted, say "Hi, I am watsonx.ai agent. How can I help you?"

Advanced configuration

Knowledge

Tools

Add a tool Create custom tool

Added tools (5)

Google search

Retrieve information from the internet with the Google search engine.

DuckDuckGo search

Agent preview

SB You: 09:57 PM

Tell me what type of procedure for B.tech Placement and what type of question are asked in interview

watsonx Agent 09:57 PM

Here are some of the top results I found:

1. Interview tips and tricks that would impress the interviewer? : r ...

• Dec 18, 2023 ... The last question from you should ALWAYS be (if not already discussed), what is the next steps in the process? This shows you want to move ...

2. How to prepare myself for joining a placement cell in my new B...

• Apr 14, 2015 ... What types of questions are typically asked during interviews at these institutions? Every College has a set of process for the ...

3. What are untold tricks / folk knowledge about campus placements ...

• Oct 30, 2021 ... Study your resume, about 25% of the interview can be based on your resume and it's basically like a question paper written by you for you to ...

4. L&T Hydrocarbon Engineering Limited is one of the most reputed ...

• Jun 26, 2023 ... .. Process Engineers! I was able to give its interview through Campus Placement and was even lucky enough to get selected. As placement season ...

5. Top 20 Engineering Interview Questions

• Whether you're interviewing for your first job out of school or you're ... What are the

Type something... 🔍 ➤

career foundation



IBM watsonx

Upgrade

?

🔔

Suyash Belhekar's Account ▾

Dallas ▾

SB

Create a deployment space

Use a space to collect assets in one place to create, run, and manage deployments

+ New

🖨 Local file

Find or create tags ▾

Add tags to make assets easier to find

Storage

Cloud Object S ▾

Space will include i

watsonx.ai Runtime

watsonx.ai Run ▾

Advanced Settings ▾

Space controls

⏻

 Allow reporting on asset metadata

The space is being prepared...

The space "Agent\_Interview" is being created.

🔄

 Step 1 of 1. Creating deployment space.

Go to space


Cancel



🔄

 Creating...

# FINAL RESULT

[Deployment spaces](#) / [Agent\\_Interview](#) / [watsonx Agent](#) /

watsonx Agent  Deployed  Online

[API reference](#) [Test](#) [Preview](#)

[New chat](#) +



watsonx Agent 10:13 PM

Hi, I am watsonx.ai agent. How can I help you?

Here are some tips for cracking the Interview round for Google:

- 1. Understand the Interview Process:** Familiarize yourself with Google's interview process. This includes understanding the types of questions they ask, the format of the interviews, and the timeline.
- 2. Prepare for Technical Questions:** Google interviews heavily focus on technical questions. Brush up on your data structures, algorithms, and system design skills. Use resources like "Cracking the Coding Interview" and online platforms like LeetCode, HackerRank, and CodeSignal to practice.
- 3. Mock Interviews:** Practice with mock interviews to get a feel for the interview process. This can help you identify areas where you need improvement and build your confidence.
- 4. Behavioral Questions:** Prepare for behavioral questions by reflecting on your past experiences. Use the STAR method (Situation, Task, Action, Result) to structure your responses.
- 5. Prepare a 30-Second Introduction:** Have a concise and impactful introduction ready. This should highlight your relevant skills and experiences.
- 6. Focus on Your Thought Process:** Google interviewers are interested in your thought process. Make sure to explain your

Type something...





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# CONCLUSION

The Interview Trainer Agent provides an interactive and intelligent platform for candidates to practice interviews in a realistic environment. By leveraging IBM Cloud services, the system simulates interviewer–candidate conversations, evaluates responses, and delivers constructive feedback. This helps users improve their communication, confidence, and technical preparation. The solution is accessible, scalable, and user-friendly, making it a valuable tool for effective interview readiness.

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# FUTURE SCOPE

- Voice & Video Analysis: Extend the agent to evaluate tone, fluency, and non-verbal cues like facial expressions and body language.
- Multilingual Support: Enable the chatbot to conduct interviews in multiple languages for wider accessibility.
- Integration with Job Portals: Connect the system with online job platforms to provide role-specific interview practice.
- Personalized Learning Path: Offer customized improvement plans based on user performance and progress over time.
- AI-Powered Analytics: Use advanced analytics to track trends in candidate performance and provide deeper insights.

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# REFERENCES

IBM Watson Assistant – Build a chatbot on IBM Cloud

<https://www.ibm.com/cloud/watson-assistant>

IBM Cloudant – Database service for storing chatbot data

<https://www.ibm.com/cloud/cloudant>

IBM Watson Speech Services – Speech-to-Text and Text-to-Speech

<https://www.ibm.com/cloud/speech-to-text>

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In recognition of the commitment to achieve  
professional excellence



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### Getting Started with Artificial Intelligence



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IBM **SkillsBuild**

Completion Certificate



This certificate is presented to

Suyash Belhekar

for the completion of

**Lab: Retrieval Augmented Generation with  
LangChain**

(ALM-COURSE\_3824998)

According to the Adobe Learning Manager system of record

**Completion date:** 24 Jul 2025 (GMT)

**Learning hours:** 20 mins



**THANK YOU !**