CAPSTONE PROJECT

INTERVIEW TRAINER AGENT

Presented By:
Barsa Priyadarsini Das– ITER SOA University – Computer Applications

OUTLINE

- **Problem Statement** (Should not include solution)

- **Proposed System/Solution**

- **System Development Approach** (Technology Used)

- **Algorithm & Deployment**

- **Result (Output Image)**

- **Conclusion**

- **Future Scope**

- **References**

edunet
foundation

PROBLEM STATEMENT

- Preparing for a job interview can be an overwhelming experience, especially when you're unsure what to expect. While there are plenty of websites and platforms that offer general tips, they often fall short when it comes to providing **personalized, role-specific guidance.**

- A fresher applying for a software engineering role and a professional switching to a managerial position have completely different needs—but most preparation tools treat them the same. There's usually no adaptation based on your **experience level, industry,** or even the **type of company** you're targeting.

- What's missing is a **smart, tailored approach**—one that understands *you* as a candidate, analyses your resume or job role, and helps you practice with the **right questions**, **model answers**, and **behavioral tips.** The lack of such focused preparation not only lowers confidence but also affects real outcomes in competitive hiring environments.

PROPOSED SOLUTION

- To address the gap in personalized interview preparation, we introduce the **Interview Trainer Agent**—an AI-powered assistant designed to act like a personal interview coach.

- Powered by **Retrieval-Augmented Generation (RAG)**, the agent doesn't just give generic tips—it actually learns about the user. When a user uploads their resume or mentions a job title, the system retrieves highly relevant data such as **real interview questions, industry-specific expectations**, and **HR best practices** from trusted online sources like job portals, professional communities, and interview databases.

- Based on this information, the agent generates a **custom preparation kit** for the user. This includes:

    Role-specific **technical and HR interview questions**

    Common **behavioral scenarios** with suggested approaches

    Model answers to help the user structure their own responses

    Personalized **improvement tips** and follow-up guidance

- The goal is to simulate the feeling of being coached by an experienced HR trainer—but in a digital, scalable way. This agent helps users not only practice smarter but also feel more confident walking into any interview, whether it's for their first internship or their next big career move.

edunet
foundation

SYSTEM APPROACH

- **IBM Cloud Lite Services:**

    IBM Watson NLP

    IBM Cloud Functions (Serverless)

    IBM Cloud Object Storage

- **IBM Cloud Lite Services:**

IBM Granite Model (for answer generation and scoring)

ALGORITHM & DEPLOYMENT

- **Algorithm Selection:**
- We adopted the **Retrieval-Augmented Generation (RAG)** approach, which combines the strengths of information retrieval and language generation. This was chosen to ensure highly relevant, role-specific interview preparation based on real-world data, instead of generating generic answers.

- **Data Input:**
- User inputs include **resume text**, **job role**, and **experience level**.
- The retriever uses these inputs to search across **recruitment portals**, **professional forums**, and **interview question datasets** indexed as vector embeddings.

- **Training Process:**
- IBM's pre-trained **Granite foundation model** is used for generation.
- A custom knowledge base (RAG corpus) is built.
- The system doesn't require traditional model training but depends on effective data retrieval and prompt engineering for fine-tuning outputs.

- **Prediction Process:**
- When a user submits their details, the retriever pulls the most relevant interview content.
- This context is passed to the Granite model, which then **generates targeted questions**, **sample answers**, and **feedback tips**.
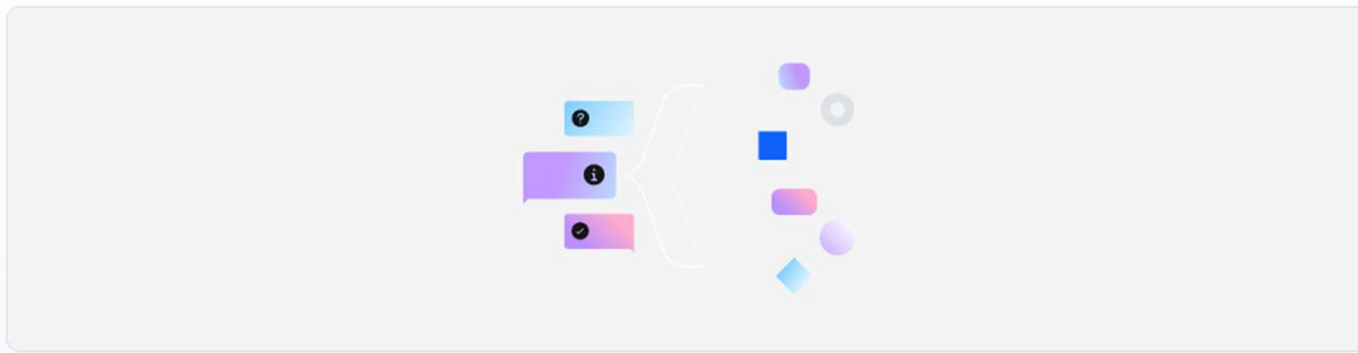- The flow is hosted on **IBM Cloud Functions** with fast response and scalability.

edunet foundation

RESULT

Preview of the Agent

You 06:45 PM

Software Developer – Fresher

Personal Interview Coach Agent 06:45 PM

For a Software Developer – Fresher position, you'll likely need to prepare for questions related to data structures, algorithms, system design, and coding problems. Here are some resources to help you:

1. **Data Structures and Algorithms**: LeetCode, HackerRank, and GeeksforGeeks are excellent platforms to practice problems related to data structures and algorithms.

2. **System Design**: Websites like Pramp, Exercism, and Designing Systems for Scalability offer resources to learn system design principles.

3. **Coding Problems**: CodeSignal, Codewars, and LeetCode also provide coding challenges that simulate real interview questions.

Type something...   ▷

You 06:48 PM

Give me some most asked HR questions for this role ?

Personal Interview Coach Agent 06:48 PM

Here are some commonly asked HR interview questions for a Software Developer - Fresher role:

1. **Tell me about yourself.** This is a classic opening question. Keep your answer concise, professional, and focused on your skills and experiences relevant to software development.

2. **Why do you want to work here?** Research the company beforehand and mention specific aspects that appeal to you, such as their projects, company culture, or values.

3. **What interests you about this position?** Align your interests with the job description, highlighting skills and experiences that make you a good fit for the role.

4. **Can you describe a challenging project and how you handled it?** Choose a project that demonstrates problem-solving

Type something...   ▷

eaunet
foundation

CONCLUSION

- The Interview Trainer Agent represents a powerful and timely solution for one of the most stressful and high-stakes challenges faced by job seekers today—**interview preparation**.

- By combining **Retrieval-Augmented Generation (RAG)** with IBM's advanced **Granite foundation models** and scalable **IBM Cloud Lite services**, we've created a system that feels less like a chatbot and more like a **personal interview coach**. It's smart enough to understand your job role, adaptive to your experience level, and capable of pulling in real-world, role-specific content to prepare you thoroughly.

- Unlike generic prep apps, our system **goes deeper**—offering targeted technical questions, soft skill evaluation, and behavior-based feedback, all based on live and relevant data.

- Whether you're a fresher stepping into your first interview or a professional aiming for a new role, the Interview Trainer Agent ensures you're never walking in unprepared.

- This solution not only **boosts confidence and performance** but also demonstrates the potential of **agentic AI** in personal career development and education.

edunet
foundation

FUTURE SCOPE

- Add **voice-based mock interviews**

- Real-time **answer scoring** with feedback

- **Multilingual support**

- Integration with **job portals** or **resume builders**

- Expand to group discussion and aptitude test training

REFERENCES

- IBM Granite Documentation

- LangChain official docs

- FAISS / IBM Cloudant for vector search

- Job portals like Naukri, LinkedIn, Glassdoor

- Papers on RAG and AI in EdTech

edunet
foundation

IBM CERTIFICATIONS

In recognition of the commitment to achieve professional excellence

Getting Started with Artificial Intelligence
IBM SkillsBuild

Barsa Priyadarshini Das

Has successfully satisfied the requirements for:

Getting Started with Artificial Intelligence

Issued on: Jul 22, 2025
Issued by: IBM SkillsBuild

Verify: https://www.credly.com/badges/0c02e08c-ce0c-4f4d-b66a-ff71750fa257

IBM

IBM CERTIFICATIONS

IBM CERTIFICATIONS

Print   Share   ✕

IBM SkillsBuild   Completion Certificate

This certificate is presented to

BARSA PRIYADARSINI DAS

for the completion of

Lab: Retrieval Augmented Generation with LangChain

(ALM-COURSE_3824998)

According to the Adobe Learning Manager system of record

Completion date: 08 Aug 2025 (GMT)   **Learning hours:** 20 mins

edunet
foundation

THANK YOU