CAPSTONE PROJECT

PROJECT TITLE: INTERVIEW TRAINER AGENT

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OUTLINE

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PROBLEM STATEMENT

- Job seekers face challenges in preparing effectively for interviews due to lack of tailored resources, uncertainty about expected questions, and low confidence.
- An Interview Trainer Agent, powered by Retrieval-Augmented Generation (RAG), assists users by generating personalized question sets and preparation strategies based on their profile, experience, and job role.
- It retrieves and delivers role-specific technical and HR questions, behavioral scenarios, and company-specific expectations to help users prepare thoroughly and succeed in competitive interviews.



PROPOSED SOLUTION

- The proposed system is an Al-powered Interview Trainer Agent that offers:
- Personalized interview question generation based on user profile, resume, and job role
- Retrieval of real-time interview trends from recruitment portals and databases
- Technical and soft skill assessment with model answers and feedback
- Resume-based tailored strategies to improve user readiness and confidence
- Deployment using IBM Cloud Lite services and IBM Granite models for accurate RAG-based question generation

SYSTEM APPROACH

Technologies Used:

1) Frontend: HTML, CSS, JavaScript

2) Backend: Node.js / Python

3) Database: MongoDB / IBM Cloudant

4) Al Model: IBM Granite for RAG

5) Deployment: IBM Cloud Lite

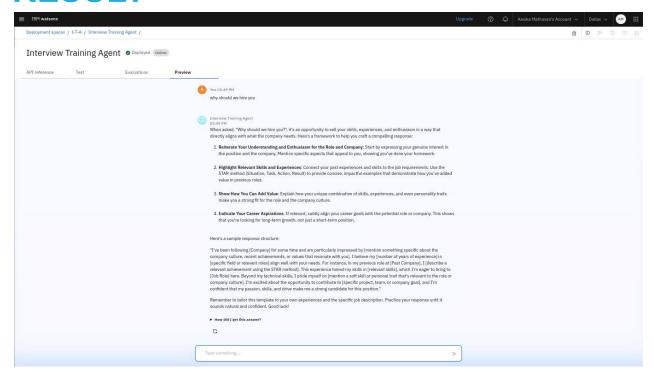


ALGORITHM & DEPLOYMENT

- RAG Workflow:
- 1. Input: Resume or Job Title
- 2. Document Retrieval: Fetch relevant question datasets and industry data
- 3. Question Generation: IBM Granite LLM generates tailored questions
- 4. Feedback Engine: Provides model answers and improvement tips
- 5. Deployment: Host on IBM Cloud with accessible UI for users



RESULT





CONCLUSION

- The Interview Trainer Agent is a powerful Al-driven solution designed to address common challenges faced by job seekers during interview preparation. By leveraging Retrieval-Augmented Generation (RAG) and IBM's advanced Al services (such as IBM Granite), this agent can deliver highly personalized and context-aware interview questions, simulate realistic interview scenarios, and provide actionable feedback.
- Through tailored technical and behavioral questions, resume-based assessments, and guidance on industry expectations, the agent enables users to prepare comprehensively for both technical and HR interviews.
- The deployment of this solution on IBM Cloud ensures scalability, reliability, and accessibility for a wide range of users. Overall, the Interview Trainer Agent improves user confidence, enhances interview readiness, and significantly boosts the chances of success in competitive hiring environments.

FUTURE SCOPE

- Voice-Based Mock Interviews: Implement speech recognition and natural language understanding to simulate real-time voice interviews with instant feedback.
- Al-Driven Scoring and Feedback: Introduce Al-based scoring for each user's responses, highlighting strengths and suggesting areas of improvement.
- Integration with Job Portals: Allow users to import job descriptions directly from platforms like LinkedIn, Indeed, or Naukri to tailor questions even more precisely.
- Real-Time Progress Tracking Dashboard: Provide users with a dashboard to monitor preparation progress, strengths, and time spent on each topic or skill.
- Multi-Language Support: Extend support for interview preparation in regional languages and international languages for broader usability.
- Industry-Specific Interview Modules: Add modules for specific domains like IT, Finance, Healthcare, and Government Exams with unique question sets and preparation tips.
- Mobile App Integration: Develop a mobile version of the platform for on-the-go interview practice and reminders.
- Al Chatbot for Instant Help: Deploy a 24/7 chatbot assistant to answer user queries, provide learning tips, and simulate rapid-fire rounds.

REFERENCES

1) IBM Cloud Documentation - Official IBM guides on deploying AI solutions using IBM Cloud Lite and IBM Granite LLMs.

Link: https://cloud.ibm.com/docs

2) Research Papers on Retrieval-Augmented Generation (RAG) – Academic studies highlighting the architecture and benefits of RAG in Al systems.

Example: Lewis et al., "Retrieval-Augmented Generation for Knowledge-Intensive NLP Tasks" (ACL 2020)

- 3) Recruitment Data Sources Public and proprietary databases from platforms like Glassdoor, LinkedIn, and Indeed for interview question patterns.
- 4) Professional Networking Content Blogs, webinars, and interview prep resources from platforms like LeetCode, GeeksforGeeks, and InterviewBit.
- 5) Al Interview Tools Benchmarking Comparative studies on Al-powered mock interview platforms and their effectiveness.
- 6) Credly IBM Certifications IBM's official certification portals showcasing completed learning modules, e.g., "Getting Started with AI," "Journey to Cloud," and "RAG Lab."

 edunet

IBM CERTIFICATIONS

Screenshot/ credly certificate(getting started with Al) :





IBM CERTIFICATIONS

Screenshot/ credly certificate(Journey to Cloud) :





IBM CERTIFICATIONS

Screenshot/ credly certificate(RAG Lab) :



THANK YOU

