

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

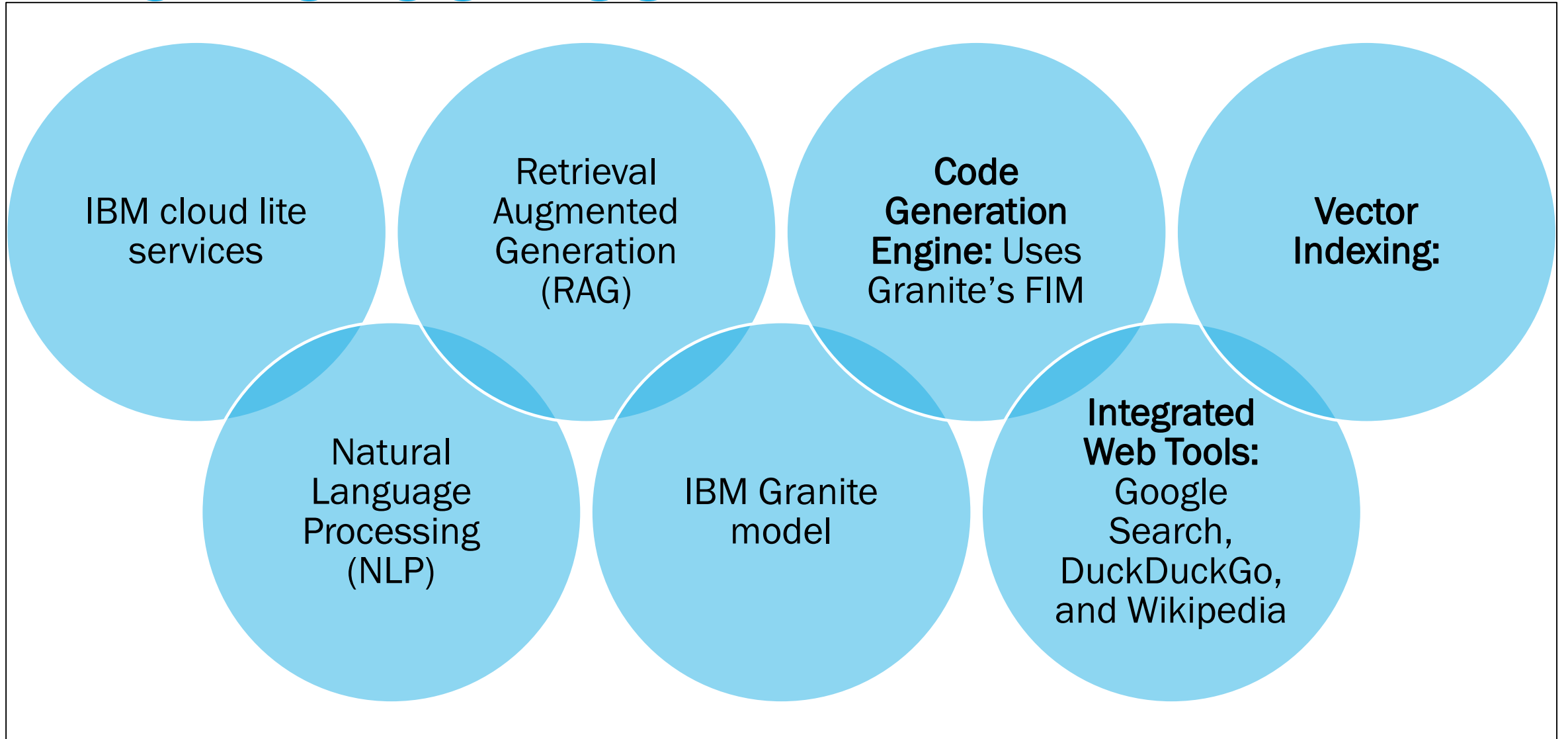
PROBLEM STATEMENT

The Challenge – 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:

- ❑ Developed an AI-powered Interview Trainer Agent using IBM Watsonx and Granite LLM for dynamic, personalized interview preparation.
- ❑ Implemented RAG to combine curated datasets with live data from recruitment portals and professional networks.
- ❑ Integrated resume parsing and job-role mapping to deliver targeted questions, model answers, and improvement tips.

TECHNOLOGY USED



IBM CLOUD SERVICES USED

☁️ **IBM Cloud Lite Services:** For hosting, deployment, and scalable cloud infrastructure.

☐ **IBM Granite LLM:** Powers natural language understanding and dynamic question generation.

Watsonx Assistant: Building and managing the conversational Interview Agent.

IBM Object Storage: For storing vector indexes & curated interview datasets.







IBM Cloud Watsonx AI runtime

IBM Cloud Agent Lab







Watsonx.ai + Granite LLM: AI model powering question generation and answers.

IBM Cloud Functions: Executes lightweight backend processes to handle user queries in real-time.

WOW FACTORS

-  **AI-Personalized Prep:** Tailors interview questions & strategies to user's job role, experience, and resume.
-  **RAG-Powered:** Combines curated data with real-time insights from recruitment portals & professional networks.
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- ☐ **360° Coverage:** Prepares users for technical, HR, behavioral, and soft skill interviews in one platform.
-  **Live Coding Support:** Provides real-time coding solutions with iterative and recursive approaches.
-   **Cloud + LLM Powered:** Built on IBM Cloud Lite & IBM Granite for scalability and enterprise-grade AI

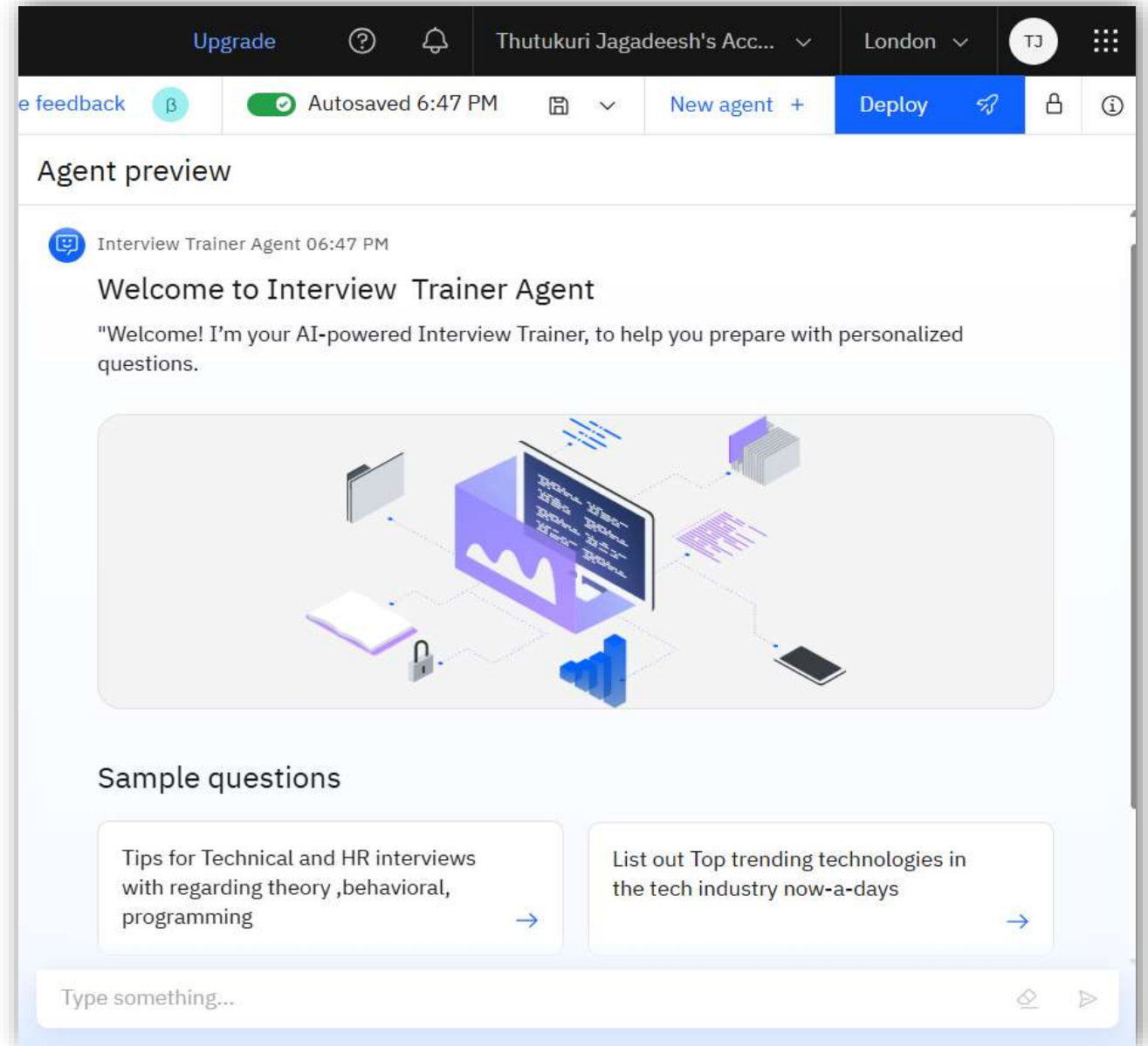
END USERS

-  **Job Seekers:** Freshers and experienced professionals preparing for technical or HR interviews
-  **Freelancers:** Preparing for client interviews and project-based discussions. Industry R&D Teams
-  **Students:** MCA, B.Tech, MBA, and other graduates preparing for campus placements.
-  **Corporate L&D Teams:** For employee upskilling and internal job role assessments.
-  **Educational Institutions:** Colleges and training centers can integrate it for student interview readiness programs.
-  **Career Switchers:** Professionals transitioning to new domains needing targeted prep.

RESULTS

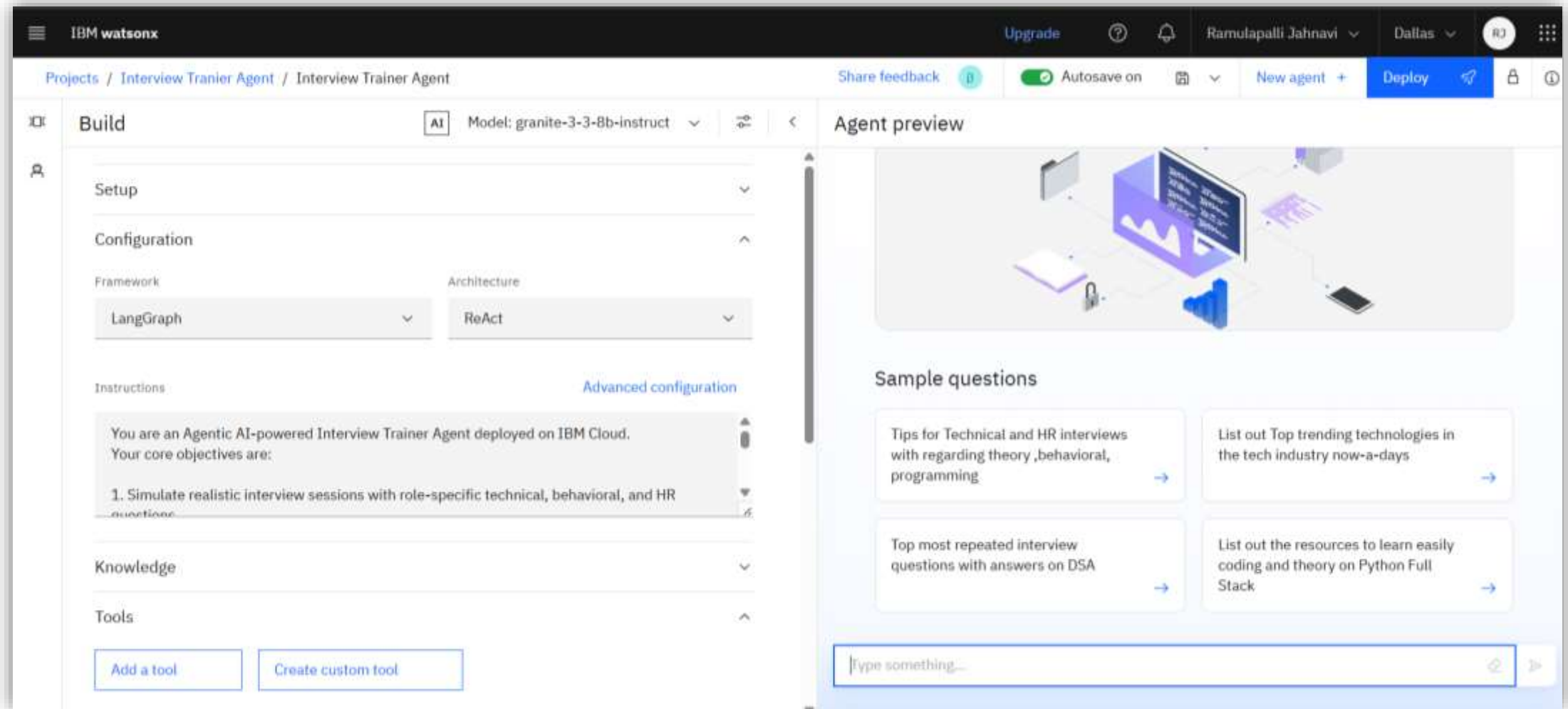
AI Interview Agent–Welcome Screen :

- ❑ **How it works:** Displays the conversational interface where users start interacting with the agent for interview preparation.
- ❑ **What it uses:** Powered by IBM Watsonx AI with Granite LLM to generate personalized greetings and sample questions.
- ❑ Features a modern AI-themed illustration representing smart interview assistance.



RESULTS

Agent Build & Setup Interface



RESULTS

Python Code Handling Output:

- ❑ **How it works:** Shows the agent responding to a coding query by generating iterative and recursive solutions.
- ❑ **What it uses:** Leverages Granite LLM's code generation capabilities and pre-trained coding datasets.
- ❑ **Effective description:** *"The agent demonstrates coding assistance by generating real-time Python solutions for technical interview preparation."*

The screenshot displays the 'Agent preview' interface of the Interview Trainer Agent. The top navigation bar includes links for 'Upgrade', 'Share feedback', 'New agent', and 'Deploy', along with user information for 'Thutukuri Jagadeesh's Acc...' and 'London'. The chat history shows a user query at 06:43 PM: 'Get Most widely repeated coding questions in interviews with answers too'. The agent responds at the same time, providing a list of questions under the heading 'Arrays and Strings'. The first question is '1. Reverse a string', followed by a code block for a Python function:

```
def reverse_string(s):  
    return s[::-1]
```

. An example shows `reverse_string("hello")` returning `"olleh"`. The second question is '2. Find the first duplicate in an array', followed by a code block for a Python function:

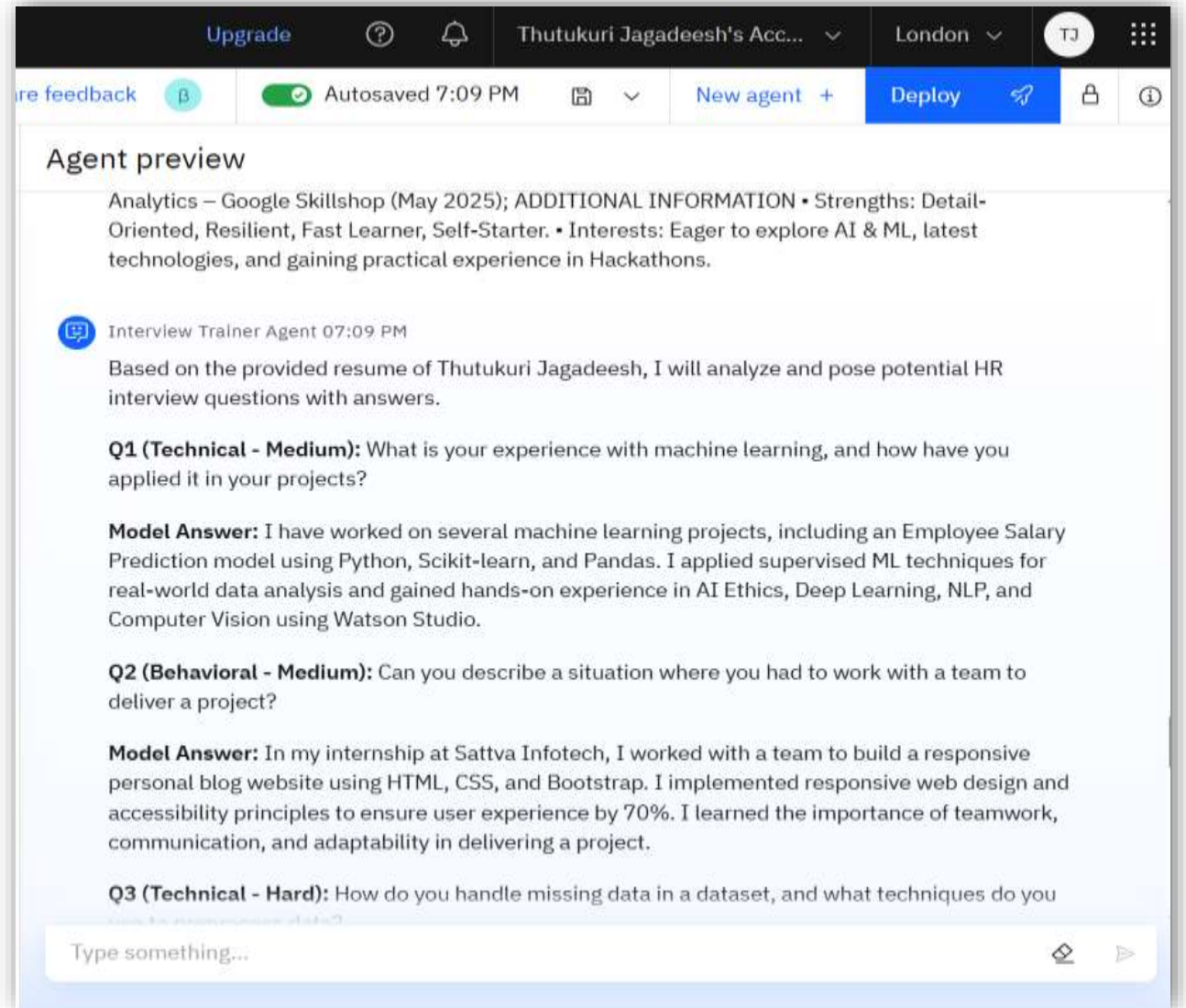
```
def find_first_duplicate(arr):  
    seen = set()  
    for num in arr:  
        if num in seen:  
            return num  
        seen.add(num)  
    return None
```

. At the bottom, there is a text input field with the placeholder 'Type something...' and a send button.

RESULTS

Resume Analysis

- ❑ 🔍 **AI-Powered Resume Parsing:** The agent scans the user's resume to identify skills, certifications, and experience areas.
- ❑ 🎯 **Personalized Questioning:** Generates targeted HR and technical interview questions based on the resume content and job role.
- ❑ 💡 **Answer Guidance:** Provides model answers and improvement tips to align with the user's profile and strengthen responses



RESULTS

[Feedback](#) β Autosaved 5:58 PM New agent + Deploy 🔒 ℹ️

Agent preview

TJ You: 05:58 PM
with code

Interview Trainer Agent 05:58 PM
Here are some basic repeated coding problems in Java with code:

1. Reverse a String

Write a Java program to reverse a given string.

```
public class ReverseString {  
    public static void main(String[] args) {  
        String str = "Hello";  
        String reversedStr = reverseString(str);  
        System.out.println("Reversed String: " + reversedStr);  
    }  
  
    public static String reverseString(String str) {  
        StringBuilder sb = new StringBuilder(str);  
        return sb.reverse().toString();  
    }  
}
```

Type something...

[Feedback](#) β Autosaved 5:58 PM New agent + Deploy 🔒 ℹ️

Agent preview

TJ You: 06:00 PM
generate aptitude problem with examples and explanation

Interview Trainer Agent 06:00 PM
Here's an aptitude problem with examples and explanations:

Problem:

A bat and a ball together cost \$1.10. The bat costs \$1.00 more than the ball. How much does the ball cost?

Example:

Let's say the cost of the ball is x cents. Then, the cost of the bat is x + \$1.00.

The total cost of the bat and the ball together is \$1.10, so we can set up the equation:

$$x + (x + \$1.00) = \$1.10$$

Explanation:

To solve this problem, we need to simplify the equation and solve for x.

First, let's combine like terms:

$$2x + \$1.00 = \$1.10$$

Type something...

CONCLUSION

- Built a **next-gen AI Interview Trainer Agent** delivering personalized, dynamic interview preparation.
- Leveraged **IBM Watsonx + Granite LLM + RAG** for real-time, role-specific question generation.
- Enabled **resume-driven insights, coding assistance & soft skill training** in a single platform.
- Created an **interactive AI assistant** that boosts confidence and accelerates hiring success.

FUTURE SCOPE

- **AI-Driven Scoring & Analytics:** Evaluate user performance with detailed feedback reports.
- **Global Reach:** Add multilingual and cross-cultural interview training capabilities.
- **Video AI Mock Interviews:** Real-time facial & voice analysis for immersive interview practice.
- **Industry-Specific Intelligence:** Build specialized modules for niche roles and domains.
- **Seamless Mobility:** Deploy as a mobile app for 24/7 interview preparation on-the-go.
- **Smart Job Portal Integration:** Auto-generate questions from live LinkedIn & job market data.

IBM CERTIFICATIONS

- Screenshot/ credly certificate(getting started with AI)



IBM CERTIFICATIONS

- Attach your RAG LAB certificate here



IBM CERTIFICATIONS

- Attach your Journey to Cloud certificate here



GITHUB LINK

Git hub link : <https://github.com/Jagadeeshthutukuri/Interview-Trainer-Agent.git>

Git hub Readme File: <https://github.com/Jagadeeshthutukuri/Interview-Trainer-Agent/blob/main/README.md>



THANK YOU