CAPSTONE PROJECT

AI-POWERED COLLEGE ADMISSION AGENT

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OUTLINE

- **Problem Statement** (Should not include solution)
- **Proposed System/Solution**
- **System Development Approach** (Technology Used)
- **Algorithm & Deployment**
- **Result (Output Image)**
- **Conclusion**
- **Future Scope**
- **References**

PROBLEM STATEMENT

- A College Admission Agent, powered by RAG (Retrieval-Augmented Generation), streamlines the student admission process. It retrieves and summarizes admission policies, eligibility criteria, and FAQs from institutional databases and official sources. Prospective students can ask natural language questions and receive accurate, up-to-date responses instantly. The agent helps with course selection, application guidance, fee structure, and important deadlines. Using trusted, real-time data, it reduces manual inquiries and enhances applicant experience. This AI-driven assistant boosts transparency, accessibility, and efficiency in college admissions.

PROPOSED SOLUTION

- A virtual agent that helps students with the admission process.
- Uses Retrieval-Augmented Generation (RAG) to fetch real-time data from official college sources.
- Provides accurate answers to queries related to courses, eligibility, fees, deadlines, etc.
- Reduces manual efforts and ensures faster access to relevant college information.

SYSTEM APPROACH

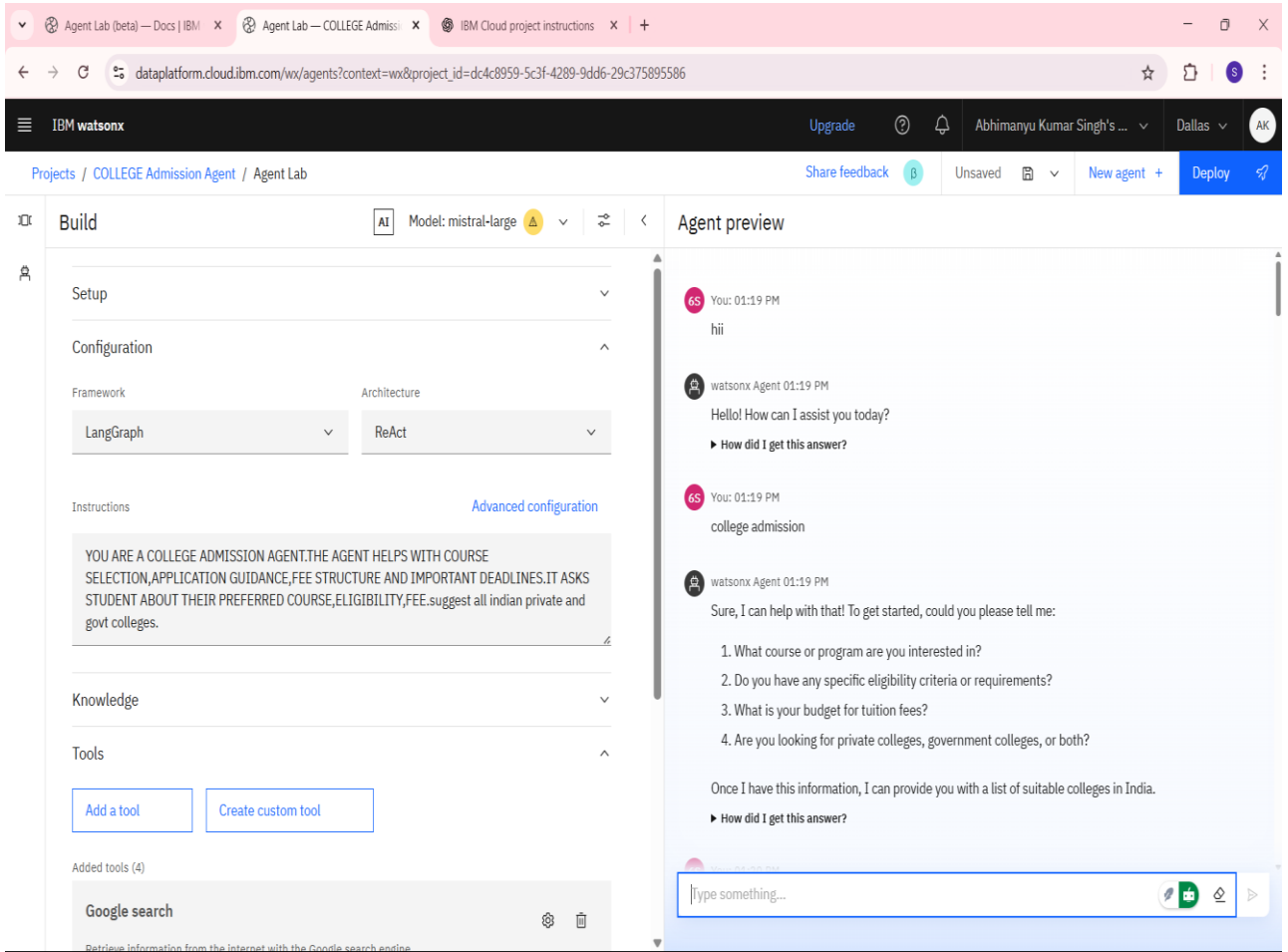
- **Frontend**: IBM watsonx Agent Lab (LangGraph + ReAct)
- **Backend**: Retrieval-Augmented Generation (RAG)
- **Model**: Mistral-large or other foundation models
- **Tools**: Google Search API, Custom Knowledge Base (optional)
- **Architecture**: ReAct (Reasoning + Acting)
- **Deployment**: IBM Cloud, watsonx platform

ALGORITHM & DEPLOYMENT

- Collect user input (course, duration, eligibility, fees, deadlines).
- Use RAG to search and retrieve relevant data.
- Summarize retrieved content using foundation models.
- Generate a natural language response for the user.
- Display college options with relevant info (fees, duration, eligibility, etc.)

RESULT

- Successfully fetched college data matching user preferences.
- Real-time, accurate responses to various admission-related queries.
- Improved user satisfaction by reducing search time.
- Agent can handle multiple user queries effectively and consistently.



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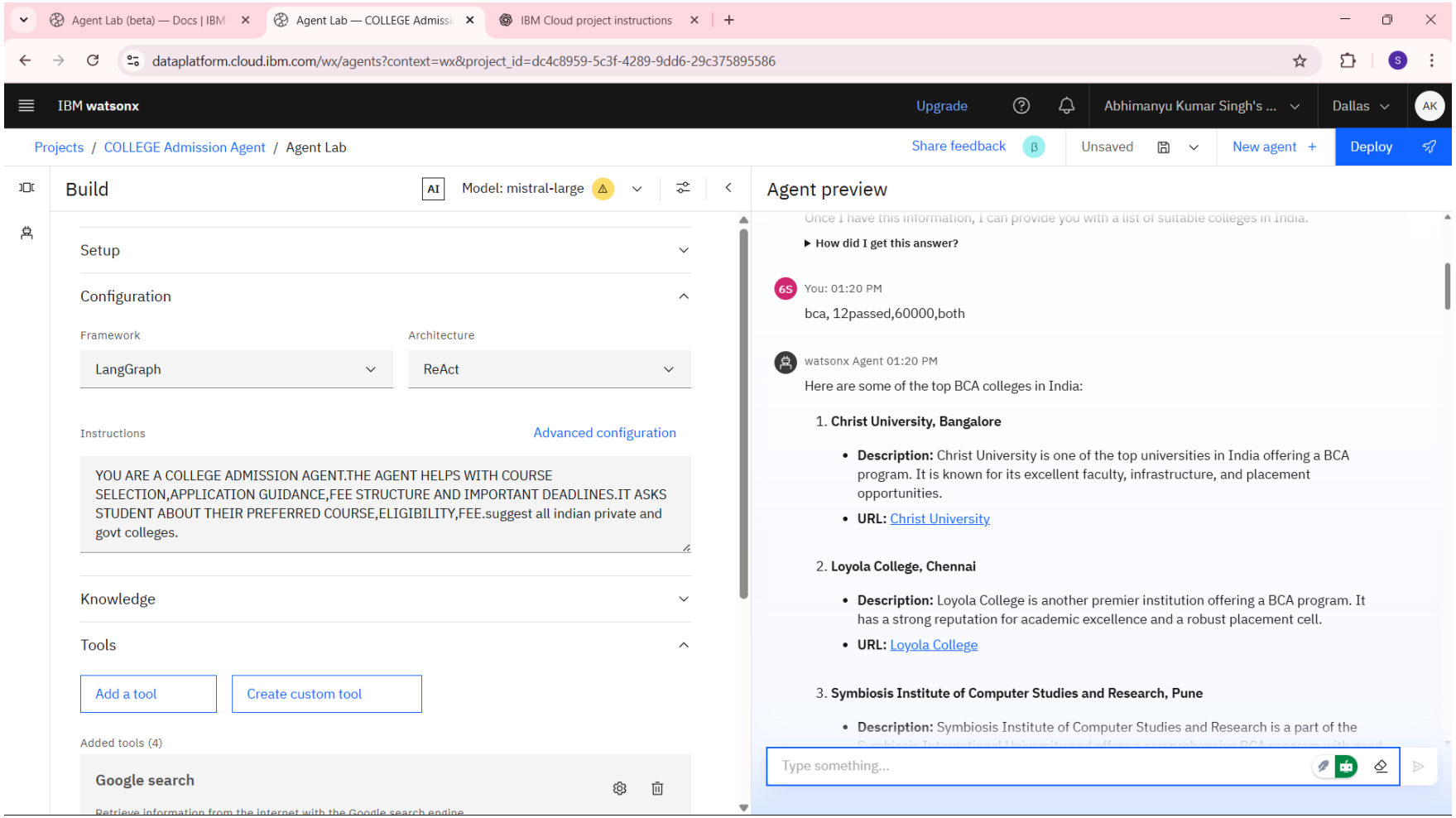
RESULT



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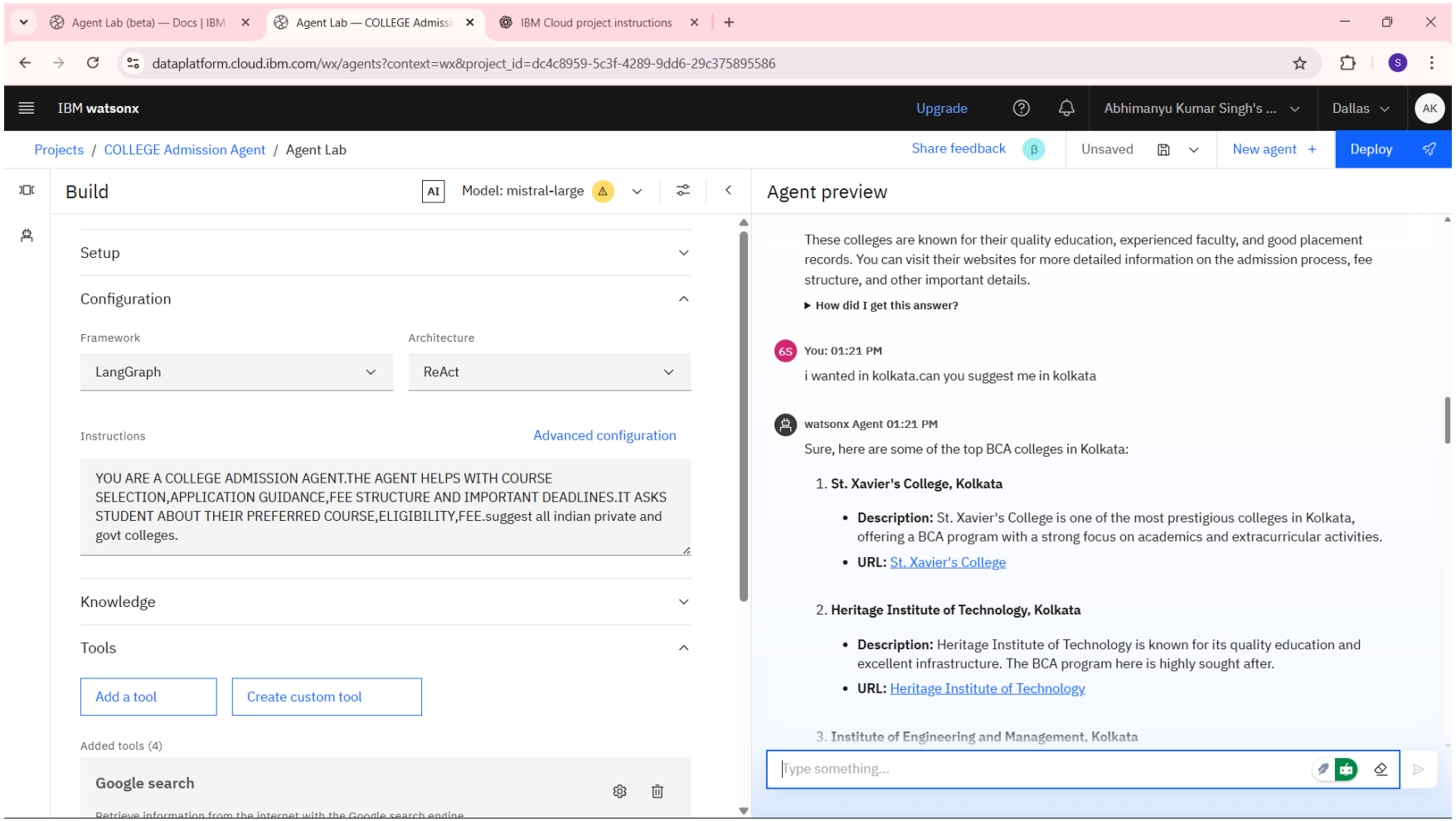
RESULT



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CONCLUSION

- The AI-powered agent simplifies the admission process.
- Makes information accessible, fast, and reliable.
- Can be extended to support more courses, states, or countries.
- Useful for students, parents, and college administrators.

FUTURE SCOPE

- Add multilingual support (e.g., Hindi, Telugu, etc.)
- Integrate with college portals for direct application submission.
- Add voice-based interaction.
- Use chatbot interface for better user experience.
- Train on specific institutional datasets for higher accuracy.

REFERENCES

- IBM watsonx documentation: https://dataplatform.cloud.ibm.com
- RAG concept papers (Facebook AI / Meta)
- Google Search API documentation
- IBM SkillsBuild for Academia resources

IBM CERTIFICATIONS

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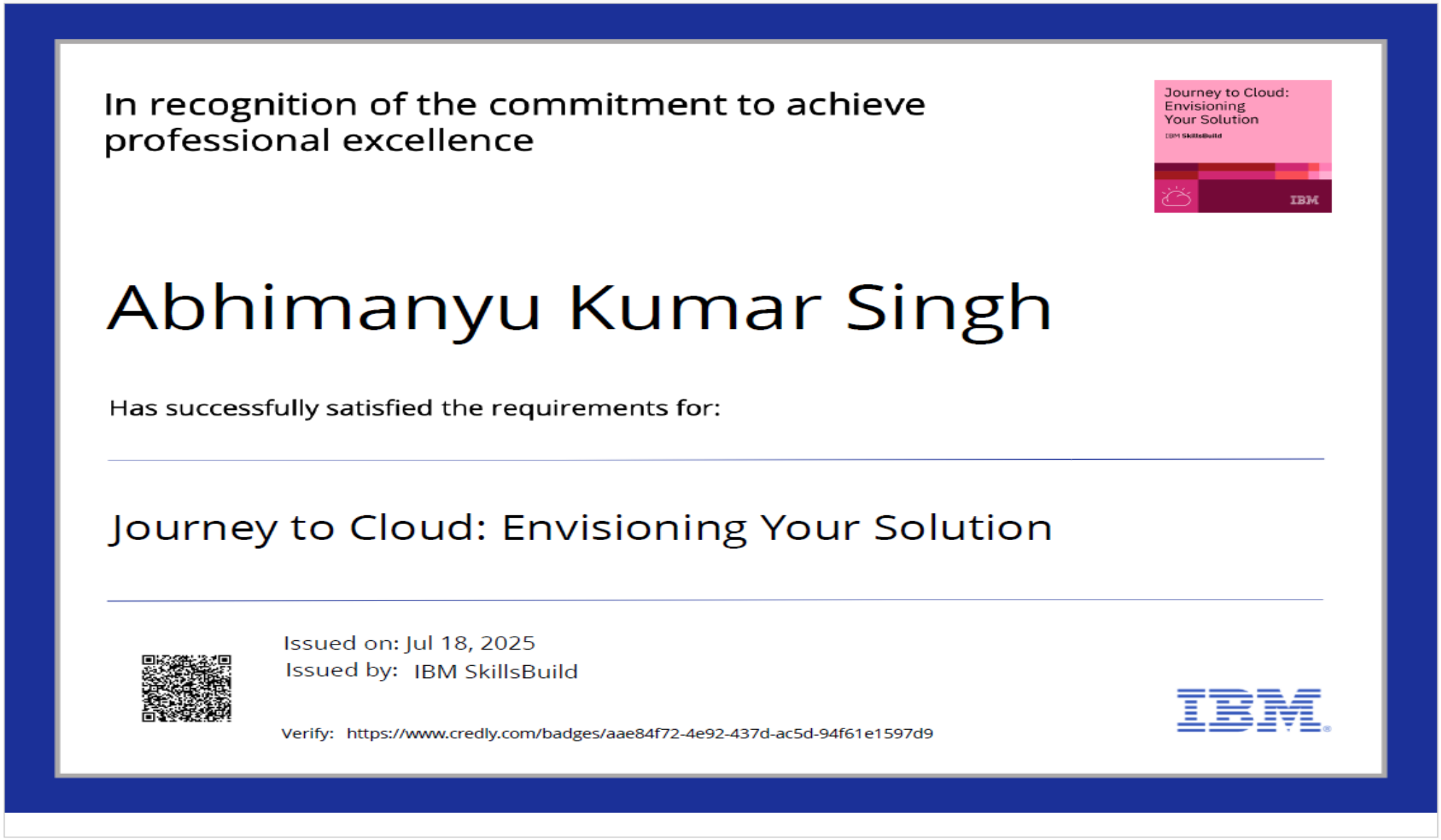

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IBM **SkillsBuild** Completion Certificate

This certificate is presented to

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for the completion of

Lab: Retrieval Augmented Generation with LangChain

(ALM-COURSE_3824998)

According to the Adobe Learning Manager system of record

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THANK YOU

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