
CAPSTONE PROJECT

COLLEGE ADMISSION AGENT

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Department : COMPUTER SCIENCE & TECHNOLOGY (CST)

OUTLINE

- Problem Statement
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- End users
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- IBM Certifications

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.

TECHNOLOGY USED

IBM cloud lite services

Natural Language Processing (NLP)

Retrieval Augmented Generation (RAG)

IBM Granite model

IBM CLOUD SERVICES USED

- IBM Cloud Watsonx AI Studio
- IBM Cloud Watsonx AI runtime
- IBM Cloud Agent Lab
- IBM Granite foundation model

WOW FACTORS

🚀 1. AI-Powered Instant Clarity on Admissions

- Uses **natural language processing** with **RAG (Retrieval-Augmented Generation)** to deliver **accurate, contextual answers** to student queries — no more hunting through PDFs or outdated webpages.

🔍 2. Real-Time Retrieval from Trusted Sources

- Dynamically pulls data from **institutional databases, government portals, and official sites**, ensuring students receive **real-time, verified information** — a critical advantage in ever-changing admission cycles.

☐ 3. Powered by IBM Granite + Cloud Lite Integration

- Built using **IBM Granite LLM** for robust multilingual understanding and summarization.
- Hosted and scaled using **IBM Cloud Lite services**, ensuring cost-effectiveness and ease of deployment.

🎓 4. Personalized Course and College Recommendations

- Suggests best-fit colleges and programs based on user interests, grades, goals, and eligibility — acting like a **virtual admission counselor**.

💬 8. 24/7 Intelligent Assistant

- Always available, scalable chatbot — reducing manual staff load by **automating 80%+ of common inquiries**.

END USERS

- Prospective Students (Domestic & International)
- Parents and Guardians
- High School Counselors & Career Advisors
- Education Consultants & Agents
- College Admission Officers
- Government & Accreditation Bodies

RESULTS

The screenshot displays the IBM Watsonx Agent Lab interface in a web browser. The browser's address bar shows the URL: `dataplatfom.cloud.ibm.com/wx/agents/context=wx&project_id=s70a8062-21ad-42bc-ad0c-15fac7c4de2b`. The page title is "IBM watsonx". The top navigation bar includes links for "Upgrade", "Akash Mallick's Account", "Dallas", and a user profile icon. The main content area is titled "Projects / college_admission_agent / Agent Lab" and features a "Deploy" button. The left sidebar contains a "Build" section with expandable sections for "Setup", "Configuration", "Instructions", "Knowledge", and "Tools". The "Configuration" section is currently expanded, showing "Framework" set to "LangGraph" and "Architecture" set to "ReAct". The "Instructions" section contains the following text: "YOU ARE A COLLEGE ADMISSION AGENT.THE AGENT HELPS WITH COURSE SELECTION ,APPLICATION GUIDANCE,FEE STRUCTURE AND IMPORTANT DEADLINE.IT ASKS STUDENTABOUT THEIR PREFERRED COURSE,ELIGIBILITY,FEE. Suggest all Indian private and govt colleges." Below the instructions, there are buttons for "Add a tool" and "Create custom tool", and a section for "Added tools (5)". The right sidebar, titled "Agent preview", shows a chat history with the following messages: "You: 10:06 PM: Hii", "watsonx Agent 10:06 PM: Hi, I am watsonx.ai agent. How can I help you? How did I get this answer?", "You: 10:14 PM: college admission", "watsonx Agent 10:14 PM: Sure, I can help with that. Could you please provide more details about the course you are interested in, your eligibility criteria, and any specific preferences you have regarding the college (e.g., location, fee structure, etc.)? How did I get this answer?", and "You: 10:15 PM: bca,12 passed,60000,both". At the bottom of the interface, there is a text input field with the placeholder "Type something..." and a "Send" button. The Windows taskbar at the bottom shows the system time as 22:24 on 03-08-2025, with the temperature at 28°C and the location as Haze.

RESULTS

The screenshot displays the IBM Watsonx Agent Lab interface. The top navigation bar includes the IBM Watsonx logo, an 'Upgrade' button, a help icon, a notification bell, the user's account 'Akash Mallick's Account', the location 'Dallas', and a profile icon. The breadcrumb trail shows 'Projects / college_admission_agent / Agent Lab'. The main interface is split into two panels: 'Build' on the left and 'Agent preview' on the right.

Build Panel:

- Model:** mistral-large
- Framework:** LangGraph
- Architecture:** ReAct
- Instructions:** YOU ARE A COLLEGE ADMISSION AGENT.THE AGENT HELPS WITH COURSE SELECTION ,APPLICATION GUIDANCE,FEE STRUCTURE AND IMPORTANT DEADLINE.IT ASKS STUDENTABOUT THEIR PREFERRED COURSE,ELIGIBILITY,FEE. Suggest all Indian private and govt colleges.
- Tools:** Includes buttons for 'Add a tool' and 'Create custom tool'.
- Added tools:** (5)

Agent preview Panel:

Shows a conversation history:

- You:** 10:15 PM
bca,12 passed,60000,both
- watsonx Agent:** 10:15 PM
Here are some of the top BCA colleges in India:

- 1. Christ University, Bangalore**
 - Description:** Christ University is one of the top universities in India offering a Bachelor of Computer Applications (BCA) program. It is known for its excellent faculty, infrastructure, and placement opportunities.
 - URL:** [Christ University](#)
- 2. Loyola College, Chennai**
 - Description:** Loyola College is another premier institution offering BCA. It has a strong academic reputation and provides good placement opportunities for its students.
 - URL:** [Loyola College](#)
- 3. Symbiosis Institute of Computer Studies and Research (SICSR), Pune**
 - Description:** SICSR is part of the Symbiosis International University and is known for its quality education in computer applications. It offers a comprehensive BCA program

At the bottom of the preview panel is a text input field with the placeholder 'Type something...' and a send button.

RESULTS

The screenshot displays the IBM watsonx Agent Lab interface. The top navigation bar includes the IBM watsonx logo, an 'Upgrade' button, a user profile for 'Akash Mallick's Account', and location settings for 'Dallas'. The main header shows the project path: 'Projects / college_admission_agent / Agent Lab'. The 'Build' section on the left contains configuration options for the AI model (set to 'mistral-large'), framework (set to 'LangGraph'), and architecture (set to 'ReAct'). The 'Instructions' field contains the text: 'YOU ARE A COLLEGE ADMISSION AGENT, THE AGENT HELPS WITH COURSE SELECTION, APPLICATION GUIDANCE, FEE STRUCTURE AND IMPORTANT DEADLINE. IT ASKS STUDENT ABOUT THEIR PREFERRED COURSE, ELIGIBILITY, FEE. Suggest all Indian private and govt colleges.' The 'Knowledge' and 'Tools' sections are also visible. The 'Agent preview' section on the right shows a conversation log where a user asks for college suggestions in Kolkata, and the agent responds with a list of three colleges: JIS College of Engineering, Techno Main Salt Lake, and The Heritage Academy, each with a description and a URL. The bottom of the screen shows a Windows taskbar with the date '03-08-2025' and time '22:23'.

IBM watsonx

Upgrade

Akash Mallick's Account

Dallas

Projects / college_admission_agent / Agent Lab

Share feedback

Unsaved

New agent

Deploy

Build

Model: mistral-large

Setup

Configuration

Framework

LangGraph

Architecture

ReAct

Instructions

Advanced configuration

YOU ARE A COLLEGE ADMISSION AGENT, THE AGENT HELPS WITH COURSE SELECTION, APPLICATION GUIDANCE, FEE STRUCTURE AND IMPORTANT DEADLINE. IT ASKS STUDENT ABOUT THEIR PREFERRED COURSE, ELIGIBILITY, FEE. Suggest all Indian private and govt colleges.

Knowledge

Tools

Add a tool

Create custom tool

Added tools (5)

Agent preview

You: 10:17 PM

I want a college in Kolkata. Could you suggest me a college in Kolkata?

watsonx Agent 10:17 PM

Here are some of the top BCA colleges in Kolkata:

- 1. JIS College of Engineering**
 - Description:** JIS College of Engineering is one of the top engineering colleges in Kolkata offering a Bachelor of Computer Applications (BCA) program. It is known for its excellent faculty, infrastructure, and placement opportunities.
 - URL:** [JIS College of Engineering](#)
- 2. Techno Main Salt Lake**
 - Description:** Techno Main Salt Lake is another premier institution offering BCA. It has a strong academic reputation and provides good placement opportunities for its students.
 - URL:** [Techno Main Salt Lake](#)
- 3. The Heritage Academy**
 - Description:** The Heritage Academy is known for its quality education in computer applications. It offers a comprehensive BCA program with good industry exposure.

Type something...

RESULTS

Deployed AI Agent

The screenshot displays the IBM watsonx Agent deployment interface. The browser address bar shows the URL: `dataplatfom.cloud.ibm.com/ml-runtime/ai-services/c6000aa0-70b7-4094-9cd3-554e187fe8c2/deployments?space_id=64e42b0c-4c01-4b46-8905-302221e7dbda&context=ws`. The interface includes a navigation bar with the IBM watsonx logo, an 'Upgrade' button, and user information for 'Akash Mallick's Account' in 'Dallas'. The main content area is titled 'Deployment spaces / college_admission_agent / watsonx Agent' and features tabs for 'Deployments', 'Code', and 'Schema'. A search bar and a 'New deployment' button are located at the top right. Below these is a table with the following columns: Name, Type, Status, Tags, and Last modified. The table contains one entry: 'watsonx Agent' with Type 'Online', Status 'Deployed' (indicated by a green checkmark), and Tags 'wx-agent'. The 'Last modified' column shows '11 hours ago' by 'Akash Mallick (You)'. At the bottom, there is a pagination bar showing 'Items per page: 20' and '1-1 of 1 items', along with a '1 of 1 pages' indicator. The Windows taskbar at the very bottom shows the date as '04-08-2025' and the time as '10:32'.

Name	Type	Status	Tags	Last modified
watsonx Agent	Online	Deployed	wx-agent	11 hours ago Akash Mallick (You)

CONCLUSION

- The **College Admission Agent**, powered by **Retrieval-Augmented Generation (RAG)** and built on **IBM Cloud Lite** and **IBM Granite**, represents a transformative leap in the higher education admission landscape. By providing accurate, real-time, and personalized responses to admission-related queries, the agent empowers students with clarity, confidence, and control over their academic futures.
- This AI-driven assistant not only simplifies and accelerates the application process for students but also alleviates the workload of admission offices, enabling institutions to focus on strategic outreach and support. With enhanced transparency, improved accessibility, and scalable automation, the solution addresses key pain points in the traditional admission journey.
- In an increasingly competitive and data-driven education environment, this smart, cloud-based agent positions institutions at the forefront of digital innovation — making admissions more inclusive, efficient, and future-ready.

FUTURE SCOPE

- Integration with Application Portals
- Multilingual and Voice Support
- Predictive Analytics & Decision Support
- Dashboard for Institutions
- Global Expansion
- Collaboration with EdTech Platforms
- Smart Scholarship Matching

IBM CERTIFICATIONS

In recognition of the commitment to achieve professional excellence



Akash Mallick

Has successfully satisfied the requirements for:

Getting Started with Artificial Intelligence



Issued on: Aug 27, 2024
Issued by: IBM SkillsBuild

Verify: <https://www.credly.com/badges/8d32ccf6-264c-4dbb-8086-8585d76da1be>



IBM **SkillsBuild**

Completion Certificate



This certificate is presented to
Akash Mallick Mallick

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