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# CAPSTONE PROJECT

## TRAVEL PLANNER AGENT

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# OUTLINE

- Problem Statement
- Proposed Solution
- System Approach
- Deployment
- Result
- Conclusion
- Future Scope
- References

# PROBLEM STATEMENT

Planning a trip can be time-consuming and confusing due to scattered information across multiple platforms. Users often struggle to choose destinations, create itineraries, manage bookings, and stay updated with real-time changes.

To solve this, we propose a Travel Planner Agent — an AI-powered assistant built using IBM Cloud Lite and IBM Granite. It helps users plan trips intelligently by:

- Suggesting destinations based on preferences and budget
- Generating personalized itineraries
- Recommending transport and accommodations
- Integrating real-time weather, maps, and alerts

This smart assistant simplifies complex travel planning into a seamless and interactive experience.

# PROPOSED SOLUTION

## User Profile Creation & Input Collection:

- The agent begins by gathering the traveler's preferences, goals, budget, dates, destinations, accommodation standards, and activity interests.
- Supports dialog-based interaction or form-based inputs for a personalized start.

## Intelligent Destination and Itinerary Recommendation:

- Uses machine learning and recommendation algorithms to suggest destinations and activities that match user preferences and constraints.
- Ensures realistic time allocation and considers proximity between attractions.

## Real-Time Data Integration:

- Integrates with mapping services and transportation APIs to recommend and visualize optimal routes, travel times, and transit options.
- Syncs with weather APIs and updates plans if forecasts change (e.g., rainy days = indoor activities).

## Accommodation and Transport Management

- Searches for available transport options (flights, trains, buses, rental cars) based on budget and convenience.
- Recommends stays (hotels, hostels, rentals) matching user preferences and manages comparisons on price, rating, and location.

## Seamless Booking and Notifications

- Connects to booking platforms to reserve transport, accommodation, and activities.
- Provides booking confirmations, reminders, and real-time alerts if changes or cancellations occur.

### **Adaptive Itinerary & Dynamic Scheduling**

- Monitors conditions throughout the trip, updating the itinerary in real-time as needed (e.g., traffic delays, attraction closures, weather events).
- Offers instant alternatives and rescheduling when disruptions arise.

### **User Assistance and Local Guidance**

- Supplies maps, navigation, and local recommendations (restaurants, events, customs).
- Acts as an in-trip assistant for spontaneous questions or changes.

### **Budget Monitoring and Optimization**

- Tracks estimated vs. actual spending.
- Suggests more cost-effective alternatives where possible.

### **Deployment:**

- Develop a user-friendly interface or application that provides real-time predictions .
- Deploy the solution on a scalable and reliable platform, considering factors like server infrastructure, response time, and user accessibility.

# SYSTEM APPROACH

The "**System Approach**" section outlines the overall strategy and methodology for developing and implementing the Travelling planning agent . Here's a suggested structure for this section:

- **System requirements:**

Operating System: Windows 10 / Linux / macOS

RAM: Minimum 4 GB

Internet: Required for IBM Cloud and API access

- **Tools:**

IBM Cloud Lite account

IBM Watsonx.ai (Granite model access)

IBM Code Engine (for deployment)

Git/GitHub for version control

- **Library required to build the model:**

IBM-Watsonx-ai

requests (for APIs)

IBM cloud CLI (for IBM Cloud operations)

# DEPLOYMENT

## 1. Click on Deploy for deployment of Agent.

The screenshot displays the IBM watsonx Agent Lab interface. The browser address bar shows the URL: `dataplatfom.cloud.ibm.com/wx/agents/407d94b5-2f38-44b0-aea4-1de2cc8b6654?project_id=554bfaeb-bcd7-471f-91d1-ba595cf23485&context=wx`. The top navigation bar includes the IBM watsonx logo, an 'Upgrade' button, a help icon, a notification bell, and user account information for 'Yash Goel's Account' with a location dropdown set to 'Dallas'. The main interface is divided into two panels. The left panel, titled 'Build', contains a sidebar with a 'Tools' section highlighted by a blue border. The right panel, titled 'Agent preview', shows a chat interface for the 'Travel planner agent'. The chat header includes the agent name and a timestamp '02:53 PM'. The main chat area displays a welcome message: 'Welcome to Travel planner agent' followed by 'An AI agent for travelling your trips.' Below this is a diagram of a travel itinerary. The 'Sample questions' section contains two example prompts: 'Your smart travel assistant is ready. Where to?' and 'Let's plan your next adventure. Just tell me where, how much, and what you love!'. At the bottom, there is a text input field labeled 'Type something...' with a send button.

Projects / Travel Planner Agent / Travel planner agent

Share feedback β Autosave on New agent **Deploy**

**Build** AI Model: granite-3-3-8b-instruct

Setup  
Configuration  
Knowledge  
**Tools**

**Agent preview**

Travel planner agent 02:53 PM

Welcome to Travel planner agent  
An AI agent for travelling your trips.

Sample questions

"Your smart travel assistant is ready. Where to?"

Let's plan your next adventure. Just tell me where, how much, and what you love!"

Type something...

## 2. Now we have to create an API key (Click create to open the API key page in new window.)

**Deploy as an AI service**

Create an online deployment. If you want to edit code in notebook format before deploying, save as a deployment notebook. [Learn more.](#)

**Info** You must create a user API key. Click Create to open the API key page in a new tab.

**Create**

**Define details**

Deployment name

Sous Chef

Target deployment space

New deployment space + Reload ↻

Why don't I see all of my spaces? ⓘ

Cancel Deploy




3. Click on create a key option .

IBM watsonx

Upgrade ? 🔔

Yash Goel's Account ▾ Dallas ▾ YG ⋮



Yash Goel

yashgoel021004@gmail.com

[Edit IBMid profile](#)

Profile


Git integrations


User API key

User API key

A user API key is required to authenticate runtime operations in IBM watsonx. Rotate keys as needed to create a new key and phase out the current key. [Learn more](#)

Create a key +

Name	Creation date	Status
<div><div></div><div><div>Start by adding a user API key.</div><div>Click Create a Key to add a user API Key.</div></div></div>		



4. User API key successfully created.


IBM watsonx

Upgrade

Yash Goel's Account

Dallas

YG



Yash Goel

yashgoel021004@gmail.com

[Edit IBMid profile](#)

Dark theme

Profile

Git integrations

User API key

✓

User API key is successfully created.

Your new key is stored in IBM watsonx and IBM Cloud.

×

User API key

A user API key is required to authenticate runtime operations in IBM watsonx.  
Rotate keys as needed to create a new key and phase out the current key. [Learn more](#)

Rotate

Name	Creation date	Status
cpd-apikey-IBMid-6910010KVQ-2025-08-03T09:40:20Z	August 3, 2025 at 3:10:20 PM	<div>✓</div> Active

## 5. Click on Reload button.

The screenshot shows the 'Deploy as an AI service' dialog box in the IBM Watsonx interface. The dialog has a title bar with a close button (X). Below the title bar, there is a message: 'Create an online deployment. If you want to edit code in notebook format before deploying, save as a deployment notebook. [Learn more.](#)'

A blue information banner at the top of the dialog contains the text: 'You must create a user API key. Click Create to open the API key page in a new tab.' A 'Reload' button is located on the right side of this banner, highlighted with a red rectangle.

The main section of the dialog is titled 'Define details' and contains the following fields and controls:

- Deployment name:** A text input field containing 'Travel planner agent'.
- Target deployment space:** A section with a 'New deployment space +' button and a 'Reload' button with a circular arrow icon.
- Why don't I see all of my deployment spaces?** A link with an information icon (i).
- Description (optional):** A text input field containing 'An AI agent for travelling your trips.'
- View in deployment space after deploying:** A checkbox that is checked, with an information icon (i).

At the bottom of the dialog, there are two buttons: 'Cancel' and 'Deploy'.

## 6. Click on Reload and after that New deployment space.

Projects / Travel Planner AI bot / Travel Planner AI

Share feedback β Autosave on 📁 ▼ New agent + Deploy 🔗 🔒 ℹ️

### Deploy as an AI service ✕

Create an online deployment. If you want to edit code in notebook format before deploying, save as a deployment notebook. [Learn more.](#)

ℹ️ You must create a user API key. Click Create to open the API key page in a new tab.

Reload

#### Define details

Deployment name

Travel PLanner AI

Target deployment space

New deployment space + Reload ↺

Why don't I see all of my deployment spaces? ℹ️

Description (optional)

A Travel Planner Agent is an AI-powered assistant that helps users plan trips efficiently.

Cancel Deploy

## 7. Enter deployment space name , development stage and select Watsonx.ai Runtime service.Click on create.

### Create a deployment space

Use a space to collect assets in one place to create, run, and manage deployments

+ New

Local file

Name

Travel Planner AI

Description (Optional)

0/100

What's the purpose of this space?

Deployment stage ⓘ

Development

Tags (optional)

Find or create tags

Add tags to make assets easier to find

Storage

Cloud Object Storage-xp

Space will include integration with [Cloud Object Storage](#) for storing space assets.

watsonx.ai Runtime (optional)

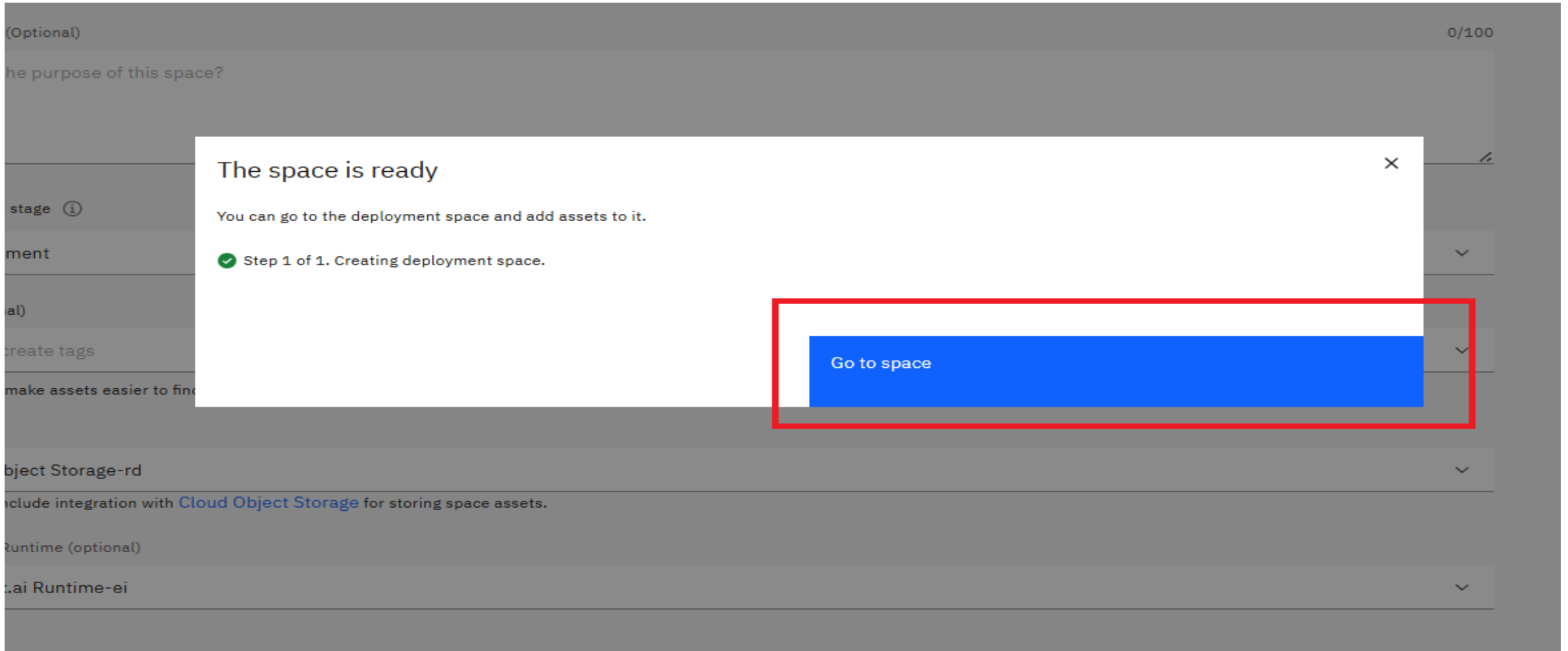
watsonx.ai Runtime-mq

Advanced Settings

Cancel

Create

## 8. Now your space is ready, click on go to space.



## 9. Now click on reload button , after that click on deploy

Projects / Travel Planner AI bot / Travel PLanner AI

Share feedback β Autosave on ⏏ ⌵ New agent + Deploy 🔗 🔒 ℹ

### Deploy as an AI service ✕

Create an online deployment. If you want to edit code in notebook format before deploying, save as a deployment notebook. [Learn more.](#)

#### Define details

Deployment name

Travel PLanner AI

Target deployment space

New deployment space + Reload ↺

Why don't I see all of my deployment spaces? ⓘ

Description (optional)

A Travel Planner Agent is an AI-powered assistant that helps users plan trips efficiently.

Cancel Deploy

10. Your Agent is Deployed and click on Travel Planner AI for preview of the agent.

Deployment spaces /

↑↓

ⓘ

🔗

🕒

💬

⚙️

My\_deployment1

Overview

Assets





Deployments

Jobs

Manage

🔍 Search

↺

Name	Type	Status	Asset	Asset type	Tags	Last modified	
 Travel PLanner AI	Online	 Deployed	Travel PLanner AI	Ai service	<div>wx-agent</div> 	33 seconds ago	

Items per page: 20

1-1 of 1 items

1 of 1 pages



# RESULT

- Asking top 5 places in Rajasthan.

Deployment spaces / My\_deployment1 / Travel PLanner AI /

## Travel PLanner AI ✓ Deployed Online

API reference

Test

Preview

New chat +



You 10:16 PM

tell me top 5 places of rajasthan



Travel Planner AI 10:16 PM

Here are the top 5 places to visit in Rajasthan:

1. **Jaipur:** Known as the 'Pink City', Jaipur is the capital city of Rajasthan and is famous for its rich history, architecture, and culture. Must-visit places include the Hawa Mahal, City Palace, Jantar Mantar, and Amber Fort.
2. **Udaipur:** Often referred to as the 'City of Lakes', Udaipur is renowned for its picturesque lakes, royal palaces, and temples. The City Palace, Lake Pichola, and Jagmandir are among the top attractions.
3. **Jodhpur:** Known as the 'Blue City' due to the blue-painted houses in old town, Jodhpur is home to the imposing Mehrangarh Fort and the serene Jaswant Thada. The city also offers a glimpse into the royal lifestyle through its many palaces and museums.

Type something...



### About this deployment ×

Name

Travel PLanner AI

Description

A Travel Planner Agent is an AI-powered assistant that helps users plan trips efficiently.

#### Deployment Details

Deployment ID: d26cd82c-963e-46...

Serving name:

No serving name.

Software specification:

runtime-24.1-py3.11

Hardware specification:

Extra extra small: 1 CPU and 2 GB RAM

Copies:

1

Tags

wx-agent

Associated asset

Travel PLanner AI

125f4a71-89b4-41fd-8c60-b776c250b60b

- Asking top 5 places in Rajasthan.

[Deployment spaces](#) / [My\\_deployment1](#) / [Travel PLanner AI](#) /

# Travel PLanner AI

✔ Deployed Online

[API reference](#) [Test](#) [Preview](#)

[New chat](#) +

Mehrangarh Fort and the serene Jaswant Thada. The city also offers a glimpse into the royal lifestyle through its many palaces and museums.

4. **Jaipur's Amer Fort:** Located in Amer, a suburb of Jaipur, this fort is a must-visit. It offers a stunning view of the Maota Lake and the city. The fort's architecture is a blend of Hindu, Muslim, and Jain styles.

5. **Pushkar:** A small town located in the Ajmer district of Rajasthan, Pushkar is considered one of the most sacred places in the world for Hindus. It is home to the Brahma Temple and has numerous ghats (steps leading down to a water body) along the Pushkar Lake.

These places offer a mix of history, culture, and natural beauty that Rajasthan is known for.

► How did I get this answer?

↺

➤

## About this deployment

✕

**Name**

Travel PLanner AI

**Description**

A Travel Planner Agent is an AI-powered assistant that helps users plan trips efficiently.

**Deployment Details**

Deployment ID: d26cd82c-963e-46...

Serving name: No serving name.

Software specification: runtime-24.1-py3.11

Hardware specification: Extra extra small: 1 CPU and 2 GB RAM

Copies: 1







**Tags**

wx-agent


**Associated asset**

Travel PLanner AI

- Asking An itinerary of Paris for 3 days.


[Deployment spaces](#) / [My\\_deployment1](#) / [Travel PLanner AI](#) /      

# Travel PLanner AI


 Deployed Online

[API reference](#) [Test](#) [Preview](#)

[New chat](#) +

 You 10:20 PM

give me an itinerary of paris for 3 days


 Travel PLanner AI 10:20 PM

## 3-Day Paris Itinerary







### Day 1: Historical Landmarks & Museums


**Morning:**

- Start your day at the iconic **Eiffel Tower**. Visit early to avoid crowds and enjoy panoramic views of Paris.
- Walk to the **Seine River** and take a river cruise to see famous landmarks like Notre-Dame Cathedral, Sainte-Chapelle, and the Louvre Museum.

Type something... 

## ■ Asking An itinerary of Paris for 3 days.

Deployment spaces / My\_deployment1 / Travel PLanner AI /      

Travel PLanner AI  Deployed Online

API reference Test **Preview**

New chat +

- Have lunch at a nearby café in the Louvre's surroundings, such as Le Comptoir du Relais.

**Evening:**


- Stroll through the **Tuileries Garden** towards the **Orsay Museum**. Admire Impressionist and Post-Impressionist artworks.
- Enjoy dinner at a charming bistro in the Orsay area, like Le Voltaire.

**Day 2: Art & Culture**

**Morning:**

- Begin with a visit to the **Musée d'Orsay**, focusing on Impressionist and Post-Impressionist art.
- Head to the **Centre Pompidou** for modern and contemporary art collections.

**Afternoon:**

Type something... 

## ■ Asking An itinerary of Paris for 3 days.

Deployment spaces / My\_deployment1 / Travel PLanner AI /

Travel PLanner AI ✓ Deployed Online

API reference Test **Preview**

New chat +

**Afternoon:**

- Explore the **Marais district**, known for its historic architecture, boutiques, and art galleries.
- Have lunch at a traditional Jewish restaurant in the Marais, such as L'As du Fallafel.

**Evening:**

- Experience the vibrant **Saint-Germain-des-Prés** area, known for its literary cafés and upscale boutiques.
- Dine at a classic French restaurant like Les Deux Magots.

**Day 3: Montmartre & Beyond**

**Morning:**

- Visit the **Sacr  -C  ur Basilica** in Montmartre for stunning views over Paris.
- Explore the artistic square of Place du Tertre and the nearby artists' studios.

Type something...

## ■ Asking An itinerary of Paris for 3 days.

Deployment spaces / My\_deployment1 / Travel PLanner AI /

Travel PLanner AI ✓ Deployed Online

API reference Test **Preview**

New chat +

**Evening:**

- Head to the **Champs-Élysées** for shopping and dining.
- End your Parisian adventure with a cabaret show at the world-famous **Moulin Rouge**.

**Additional Tips:**

- **Transportation:** Use the Paris Metro for efficient travel between attractions. Purchase a Navigo pass for unlimited travel.
- **Weather:** Check the weather forecast using the Weather tool. Pack accordingly, especially if visiting in less predictable seasons.
- **Local Guides:** For more in-depth local insights, consider using local guidebooks or apps.

Remember to adjust this itinerary based on your personal interests and pace. Enjoy your trip to Paris!

► How did I get this answer?

Type something...

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# CONCLUSION

In conclusion, the proposed Travel Planner Agent leverages the power of IBM Cloud Lite and IBM Granite to tackle the challenges of fragmented and cumbersome travel planning. By intelligently aggregating destination suggestions, personalized itineraries, tailored transport and accommodation options, and real-time updates, this AI-powered assistant delivers a cohesive and user-friendly solution. It empowers travelers to make informed choices, saves time, and adapts proactively to changes, transforming the travel planning journey into a seamless, efficient, and enjoyable experience.

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# FUTURE SCOPE

The future of travel management will be defined by fully autonomous AI agents that handle every aspect of planning, booking, and in-trip adjustments with minimal input, offering proactive, emotionally intelligent, and hyper-personalized support. These systems will leverage multimodal interfaces—such as voice, AR/VR, and wearables—to create immersive, intuitive experiences, while advanced machine learning will tailor recommendations to users' real-time context, preferences, and emotions, predicting disruptions and providing seamless solutions before problems arise.



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# REFERENCES

- edunet foundation
- IBM cloud

# IBM CERTIFICATIONS

In recognition of the commitment to achieve  
professional excellence



## Yash Goel

Has successfully satisfied the requirements for:

### Getting Started with Artificial Intelligence



Issued on: Jul 17, 2025  
Issued by: IBM SkillsBuild

Verify: <https://www.credly.com/badges/49038866-303b-4c98-9b0b-4c372dc5682f>



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professional excellence



## Yash Goel

Has successfully satisfied the requirements for:

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### Journey to Cloud: Envisioning Your Solution

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7/23/25, 11:17 PM

Completion Certificate | SkillsBuild

IBM **SkillsBuild**

Completion Certificate



This certificate is presented to  
**Yash Goel**

for the completion of

**Lab: Retrieval Augmented Generation with  
LangChain**

(ALM-COURSE\_3824998)

According to the Adobe Learning Manager system of record

**Completion date:** 23 Jul 2025 (GMT)

**Learning hours:** 20 mins

[https://skills.yourlearning.ibm.com/certificate/ALM-COURSE\\_3824998](https://skills.yourlearning.ibm.com/certificate/ALM-COURSE_3824998)

1/1



**THANK YOU**