
CAPSTONE PROJECT

TRAVEL PLANNER AGENT

Presented By:

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OUTLINE

- Problem Statement
- Proposed System/Solution
- System Development Approach
- Algorithm & Deployment
- Result (Output Image)
- Conclusion
- Future Scope
- References

PROBLEM STATEMENT

- Planning a trip involves searching for destinations, transport, hotels, and weather info across different platforms, which can be time-consuming and confusing. Travelers need a smart assistant that can understand their preferences and provide personalized travel suggestions, plans, and updates in one place through a simple conversation.

PROPOSED SOLUTION

- The system takes user inputs such as:
 - Preferred location
 - Budget
 - Number of days
 - Travel interests (e.g., adventure, heritage, nature)
- Based on the input, it filters suitable places using a predefined destination dataset.
- It matches filtered locations with activity types based on user interests.
- Real-time factors like weather, events, and map data are considered to optimize the itinerary.
- An AI-based logic creates a day-wise plan including:
 - Place to visit
 - Time of visit
- The final travel plan is displayed to the user in a clear and easy-to-follow format.

SYSTEM APPROACH

The "System Approach" section outlines the overall strategy and methodology for developing and implementing the Smart Travel Planner system. Here's the structured approach:

- **IBM Cloud** (mandatory)
- **IBM Watsonx.ai** for model development and deployment
- **IBM Cloud Object Storage** for storing datasets and input data
- **OpenWeatherMap API** for real-time weather data integration
- **Google Maps API** for route planning and location-based suggestions
- Associated **Watsonx.ai Runtime** service

ALGORITHM & DEPLOYMENT

- Logged into IBM Cloud and accessed the Watsonx Dashboard.
- Navigated to **Watsonx.ai** via the documentation tab.
- Entered **Agentic Lab** and created a **sandbox project**.
- Selected the **free plan**, named the project, and initialized it.
- Associated **Watsonx.ai Runtime** service with the project.
- Opened **Build an AI Agent** section to start building the agent.
- Added and enabled required tools for interaction.
- Entered prompt instructions (e.g., welcome message, planner logic).
- Created **API key** and **deployment space** for publishing.
- Deployed the agent and used **Preview** to test final output.

ALGORITHM & DEPLOYMENT

The screenshot shows the IBM Cloud Watsonx overview page. The browser address bar displays `cloud.ibm.com/watsonx/overview`. The page features a dark sidebar with the 'watsonx' logo and a list of links: 'Documentation', 'watsonx.ai', 'watsonx.governance', 'watsonx.data', 'watsonx.data intelligence', and 'watsonx.data integration'. The main content area has a header with a search bar and navigation links for 'Catalog', 'Manage', and 'Madhan Kumar's Account'. Below the header, there's a large banner with the text 'core workflows for building custom generative AI solutions.' and a diagram of a neural network. The page is divided into three columns, each representing a different Watsonx service: 'watsonx', 'Data Fabric', and 'watsonx.data'. Each column includes a description, a 'Start free trial' or 'Launch' button, and a list of related services with their descriptions and status indicators (green checkmarks).

IBM Cloud Search resources and products... Catalog Manage Madhan Kumar's Account

watsonx

core workflows for building custom generative AI solutions.

watsonx

Build, evaluate, and deliver AI solutions that are informed by your enterprise knowledge.

[Start free trial](#)

watsonx.ai Build and deploy AI apps

watsonx.governance Trust AI models

watsonx.data Scale AI models

Data Fabric

Design a data architecture to deliver high-quality, trusted data products that are ready for AI.

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watsonx.data intelligence Manage, trust, and share data

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watsonx.data Premium

The only hybrid, open data lakehouse for enterprise AI and analytics.

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watsonx.data Scale AI models

watsonx.ai Build and deploy AI apps

watsonx.data intelligence Manage, trust, and share data

watsonx.data integration Integrate any data, any style

<https://dataplatform.cloud.ibm.com/docs/content/wsj/getting-started/welcome-main.html?context=wx&audience=wdp>

ALGORITHM & DEPLOYMENT

The screenshot displays the IBM watsonx AI Trip Planner interface. The browser address bar shows the URL: `datapatform.cloud.ibm.com/wx/agents?context=wx&project_id=ece0432d-7f28-4738-a008-4f60037e955e`. The interface is divided into two main sections: **Build** and **Agent preview**.

Build Section:

- Model:** llama-3-3-70b-instruct
- Framework:** LangGraph
- Architecture:** ReAct
- Instructions:** You are a helpful assistant that uses tools to answer questions in detail. When greeted, say "Hi, I am watsonx.ai agent. How can I help you?"
- Knowledge:** (Empty section)
- Tools:** (Empty section with buttons: Add a tool, Create custom tool)

Agent preview Section:

- watsonx Agent 08:02 PM**
- Welcome to watsonx Agent**
- Change this description to reflect your particular agent**
- Diagram:** A flowchart showing a sequence of steps connected by arrows, with a magnifying glass icon highlighting a specific step.
- Input field:** Type something...

The interface also includes a top navigation bar with the IBM watsonx logo, an Upgrade button, a help icon, a notification bell, and user information (Madhan Kumar's Account, Dallas, MK). A bottom status bar shows the Windows taskbar with various application icons and the system clock (08:03 PM, 31-07-2025).

ALGORITHM & DEPLOYMENT

The screenshot shows a web browser window with multiple tabs. The active tab is 'TripWise AI — Spaces | IBM watsonx'. The address bar shows the URL: `dataplatfrom.cloud.ibm.com/ml-runtime/spaces/24553b14-12dc-499f-b1e8-00ce974bf0a8/deployments?context=wx`. The page header includes the IBM Watsonx logo, an 'Upgrade' button, a help icon, a notification bell, and the user's account information: 'Madhan Kumar's Account' and 'Dallas'. The main content area is titled 'TripWise AI' and has a navigation bar with tabs: 'Overview', 'Assets', 'Deployments' (selected), 'Jobs', and 'Manage'. Below the navigation bar is a table with the following columns: 'Name', 'Type', 'Status', 'Asset', 'Asset type', 'Tags', and 'Last modified'. The table contains one row for the deployment 'watsonx Agent', which is 'Online' and in an 'Initializing' state. The 'Last modified' column shows '9 seconds ago' by 'Madhan Kumar (You)'. A search bar is located at the top left of the table, and a refresh icon is at the top right.

Name	Type	Status	Asset	Asset type	Tags	Last modified
(p) watsonx Agent	Online	⌚ Initializing	watsonx Agent	Ai service	wx-agent	9 seconds ago Madhan Kumar (You)

ALGORITHM & DEPLOYMENT

The screenshot displays the IBM watsonx Agent deployment interface in a web browser. The browser's address bar shows the URL: `dataplatfom.cloud.ibm.com/ml-runtime/deployments/9319c88f-0bff-402a-9d84-5815f537d910/chat?space_id=24553b14-12dc-499f-b1e8-00ce974bf0a8&context=wx&flush=true`. The page title is "watsonx Agent" with a status of "Deployed" and "Online".

The interface includes a navigation bar with "API reference", "Test", and "Preview" tabs. The "Preview" tab is active, showing a chat interface. The chat history includes a user message "hi" and an agent response "Hi, I am TripWise AI, your travel assistant. How can I help you plan your next trip?". Below the chat history is a text input field with the placeholder "Type something..." and a send button.

On the right side, there is a sidebar titled "About this deployment" containing the following details:

- Name:** watsonx Agent
- Description:** Change this description to reflect your particular agent
- Deployment Details:**
 - Deployment ID: 9319c88f-0bff-40...
 - 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:** watsonx Agent (86e6532d-a3df-469c-96ab-ca66235200c4)

RESULT

Show how well the travel planner agent gives accurate and useful travel plans. Add examples of user questions and the agent's replies to show its performance.

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 'Madhan Kumar's Account', and a location dropdown for 'Dallas'. The main interface is divided into two panels: 'Build' on the left and 'Agent preview' on the right.

Build Panel:

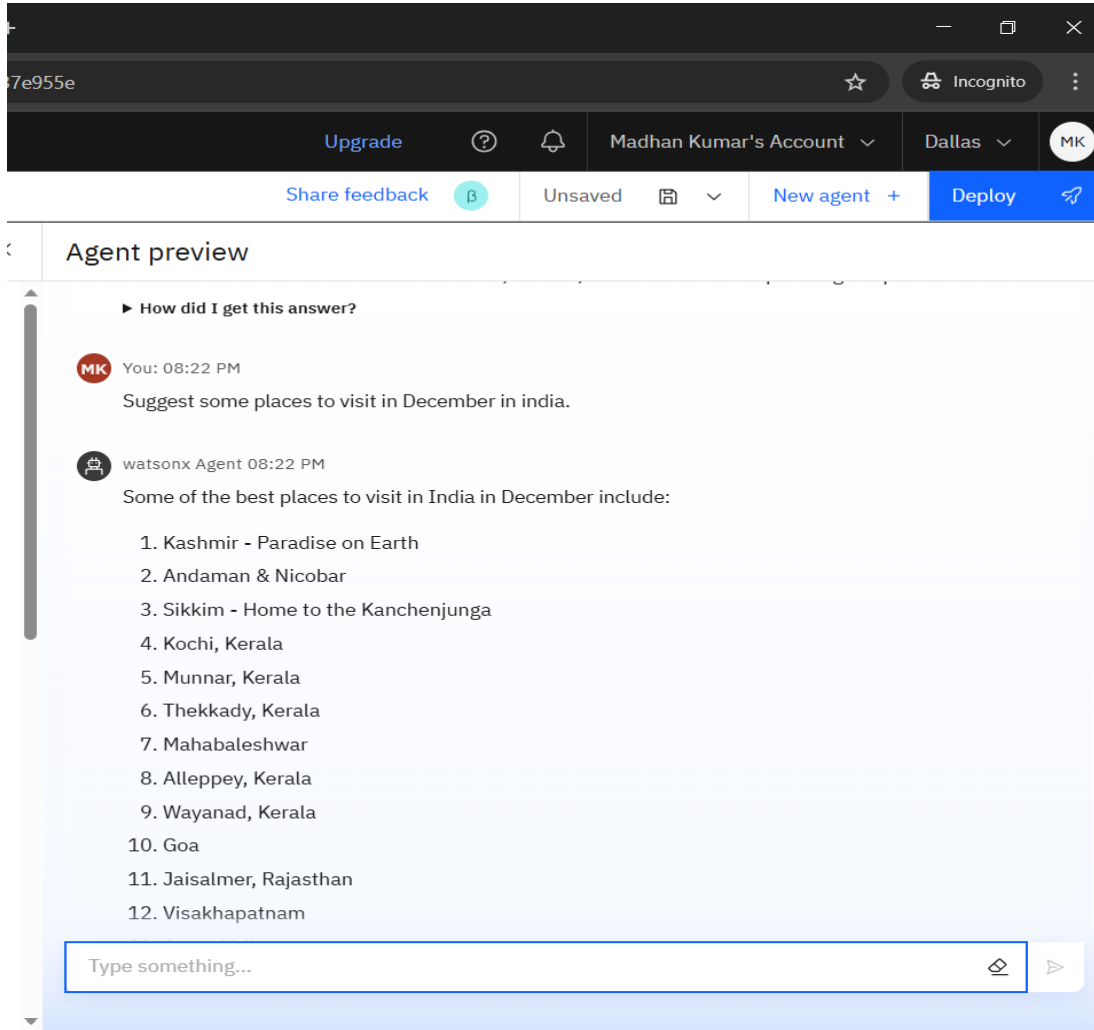
- Model:** llama-3-3-70b-instruct
- Framework:** LangGraph
- Architecture:** ReAct
- Instructions:** A list of prompts for the agent, including: "When greeted, say: Hi, I am TripWise AI, your travel assistant. How can I help you plan your next trip?", "When the user asks for a destination, ask about their interests (e.g., beaches, mountains, culture) and suggest 3 suitable places.", "When the user asks about the weather, ask for the location and date, then provide current or forecasted weather details.", and "When the user asks how to travel to a location, provide suitable transport options like flights, trains or buses based on the location." A link for 'Advanced configuration' is also present.
- Knowledge:** A section for 'Vector index' with a dropdown to 'Select or create vector index' and a 'Clear chat' link.

Agent preview Panel:

- Shows a chat history with a user message: "hi" and an agent response: "Hi, I am TripWise AI, your travel assistant. How can I help you plan your next trip?".
- Below the chat history is a text input field with the placeholder "Type something..." and a 'Send' button.

The bottom of the image shows a Windows taskbar with various application icons and a system clock indicating 08:21 PM on 31-07-2025.

RESULT



The screenshot shows a web browser window with the URL "7e955e". The browser's address bar includes "Incognito" and "Madhan Kumar's Account". The page has a navigation bar with "Upgrade", "Share feedback", "Unsaved", "New agent +", and "Deploy". The main content area is titled "Agent preview" and displays a conversation log. The user asks, "Suggest some places to visit in December in india." The agent responds with a list of 12 locations in India. At the bottom, there is a text input field with the placeholder "Type something..." and a send button.

Agent preview

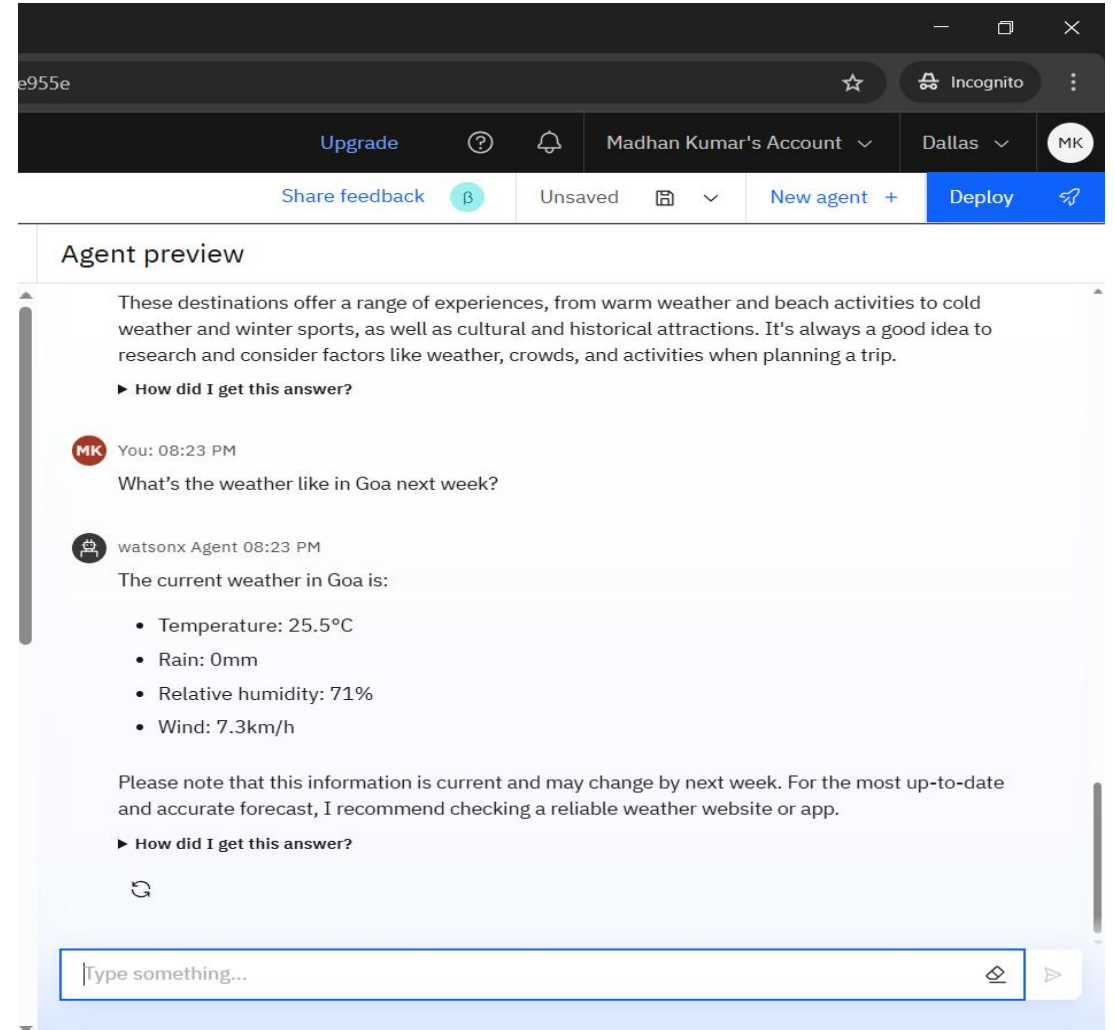
► How did I get this answer?

MK You: 08:22 PM
Suggest some places to visit in December in india.

watsonx Agent 08:22 PM
Some of the best places to visit in India in December include:

1. Kashmir - Paradise on Earth
2. Andaman & Nicobar
3. Sikkim - Home to the Kanchenjunga
4. Kochi, Kerala
5. Munnar, Kerala
6. Thekkady, Kerala
7. Mahabaleshwar
8. Alleppey, Kerala
9. Wayanad, Kerala
10. Goa
11. Jaisalmer, Rajasthan
12. Visakhapatnam

Type something...



The screenshot shows a web browser window with the URL "e955e". The browser's address bar includes "Incognito" and "Madhan Kumar's Account". The page has a navigation bar with "Upgrade", "Share feedback", "Unsaved", "New agent +", and "Deploy". The main content area is titled "Agent preview" and displays a conversation log. The user asks, "What's the weather like in Goa next week?" The agent responds with the current weather in Goa, including temperature, rain, relative humidity, and wind speed. At the bottom, there is a text input field with the placeholder "Type something..." and a send button.

Agent preview

These destinations offer a range of experiences, from warm weather and beach activities to cold weather and winter sports, as well as cultural and historical attractions. It's always a good idea to research and consider factors like weather, crowds, and activities when planning a trip.

► How did I get this answer?

MK You: 08:23 PM
What's the weather like in Goa next week?

watsonx Agent 08:23 PM
The current weather in Goa is:

- Temperature: 25.5°C
- Rain: 0mm
- Relative humidity: 71%
- Wind: 7.3km/h

Please note that this information is current and may change by next week. For the most up-to-date and accurate forecast, I recommend checking a reliable weather website or app.

► How did I get this answer?

Type something...

RESULT

The screenshot shows a web browser window with the URL 7e955e. The browser's address bar and tabs are visible. The page header includes a navigation bar with links for 'Upgrade', 'Madhan Kumar's Account', 'Dallas', and a user profile icon 'MK'. Below the header, there are buttons for 'Share feedback', 'Unsaved', 'New agent +', and 'Deploy'. The main content area is titled 'Agent preview' and displays a chat conversation. The user's message is: 'I need a hotel in Ooty under ₹2000 per night'. The agent's response is: 'Here are some hotels in Ooty that you may want to consider:'. Below this, a list of 10 hotels is shown: 1. Kings Cliff Ooty, 2. Fortune Resort Sullivan Court, Ooty, 3. Accord Highland Ooty, 4. Mango Hill Shola, 5. Western Valley Resorts, 6. Treebo Skydale Inn & Suites, 7. StayVista at The West Wind, 8. Logan Camp Ooty, 9. Rosepark Residency, 10. Astoria Residency. At the bottom, there is a text input field with the placeholder 'Type something...' and a 'Deploy' button.

7e955e

Upgrade Madhan Kumar's Account Dallas MK

Share feedback Unsaved New agent + Deploy

Agent preview

You: 08:24 PM
I need a hotel in Ooty under ₹2000 per night

watsonx Agent: 08:24 PM
Here are some hotels in Ooty that you may want to consider:

1. Kings Cliff Ooty
2. Fortune Resort Sullivan Court, Ooty
3. Accord Highland Ooty
4. Mango Hill Shola
5. Western Valley Resorts
6. Treebo Skydale Inn & Suites
7. StayVista at The West Wind
8. Logan Camp Ooty
9. Rosepark Residency
10. Astoria Residency

You can find more information and book these hotels through websites like Hotels.com, TripAdvisor, Agoda, MakeMyTrip, and Expedia.

► How did I get this answer?

Type something... Deploy

The screenshot shows a web browser window with the URL 0037e955e. The browser's address bar and tabs are visible. The page header includes a navigation bar with links for 'Upgrade', 'Madhan Kumar's Account', 'Dallas', and a user profile icon 'MK'. Below the header, there are buttons for 'Share feedback', 'Unsaved', 'New agent +', and 'Deploy'. The main content area is titled 'Agent preview' and displays a chat conversation. The user's message is: 'Give me an approximate budget for a trip to Leh for two people'. The agent's response is: 'The approximate budget for a trip to Leh for two people can range from ₹20,000 to ₹30,000 per person for a week-long trip, depending on the mode of transportation, accommodation, and activities. It's recommended to plan ahead and book accommodations and transportation in advance to get the best prices. Additionally, consider budgeting for food, drinks, and other expenses.' Below this, there is a list of 10 hotels: 7. StayVista at The West Wind, 8. Logan Camp Ooty, 9. Rosepark Residency, 10. Astoria Residency. At the bottom, there is a text input field with the placeholder 'Type something...' and a 'Deploy' button.

0037e955e

Upgrade Madhan Kumar's Account Dallas MK

Share feedback Unsaved New agent + Deploy

Agent preview

7. StayVista at The West Wind

8. Logan Camp Ooty

9. Rosepark Residency

10. Astoria Residency

You can find more information and book these hotels through websites like Hotels.com, TripAdvisor, Agoda, MakeMyTrip, and Expedia.

► How did I get this answer?

You: 08:25 PM
Give me an approximate budget for a trip to Leh for two people

watsonx Agent: 08:25 PM
The approximate budget for a trip to Leh for two people can range from ₹20,000 to ₹30,000 per person for a week-long trip, depending on the mode of transportation, accommodation, and activities. It's recommended to plan ahead and book accommodations and transportation in advance to get the best prices. Additionally, consider budgeting for food, drinks, and other expenses.

► How did I get this answer?

Type something... Deploy

RESULT

The screenshot displays the IBM Watsonx AI Trip Planner interface. The browser address bar shows the URL: `dataplatfom.cloud.ibm.com/wx/agents?context=wx&project_id=ece0432d-7f28-4738-a008-4f60037e955e`. The interface is divided into two main sections: **Build** and **Agent preview**.

Build Section:

- Model:** llama-3-3-70b-instruct
- LangGraph:** ReAct
- Instructions:**
 - "When asked for hotel suggestions, ask for the destination and budget, and suggest 3 options with a brief description."
 - "When the user asks for a trip budget, ask for destination, number of days, and number of travelers, and give an approximate cost breakdown."
 - "Remind users about pending bookings (hotels, flights, etc.) and suggest actions to complete them."
- Knowledge:** Vector index (Select or create vector index)
- Tools:** Add a tool, Create custom tool

Agent preview Section:

- User:** 08:25 PM. "Give me an approximate budget for a trip to Leh for two people"
- watsonx Agent:** 08:25 PM. "The approximate budget for a trip to Leh for two people can range from ₹20,000 to ₹30,000 per person for a week-long trip, depending on the mode of transportation, accommodation, and activities. It's recommended to plan ahead and book accommodations and transportation in advance to get the best prices. Additionally, consider budgeting for food, drinks, and other expenses."
- User:** 08:26 PM. "Have I booked my flight to Goa?"
- watsonx Agent:** 08:26 PM. "No, you haven't booked your flight to Goa yet. Would you like to book one now? I can help you with that. Please let me know your travel dates and preferences, and I can assist you in finding and booking a suitable flight."

The interface also includes a **Deploy** button and a **Share feedback** link. The bottom of the screen shows the Windows taskbar with various application icons and the system clock indicating 08:26 PM on 31-07-2025.

CONCLUSION

- Summarize the findings and discuss how effective the travel planner agent is in generating smart travel plans. Mention any challenges faced during development and suggest possible improvements. Highlight how the agent helps users plan better trips with personalized suggestions.

FUTURE SCOPE

- Explore possible improvements like adding more travel data sources, making the agent faster and smarter, and expanding it to support more cities or countries.
- And can also consider using advanced AI models or integrating new tech like edge computing for better performance.

REFERENCES

- List and cite relevant sources, research papers, and articles that supported the development of the travel planner agent. This may include studies on travel recommendation systems, natural language processing (NLP), AI chatbots, and best practices in AI model evaluation and deployment.

IBM CERTIFICATIONS

In recognition of the commitment to achieve
professional excellence



V Madhan Kumar

Has successfully satisfied the requirements for:

Getting Started with Artificial Intelligence



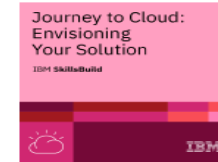
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IBM CERTIFICATIONS

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Completion Certificate



This certificate is presented to

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LangChain**

(ALM-COURSE_3824998)

According to the Adobe Learning Manager system of record

Completion date: 23 Jul 2025 (GMT)

Learning hours: 20 mins



THANK YOU