AI And Cloud PROJECT

TRAVEL PLANNER AGENT

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OUTLINE

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

Example:Planner Agent is an AI-powered assistant that helps users plan trips efficiently and intelligently. It uses real-time data to suggest destinations, build itineraries, and recommend transport and accommodation options. By understanding user preferences, budgets, and constraints, it tailors personalized travel plans. Integrated with maps, weather updates, and local guides, it ensures a smooth travel experience. The agent can also manage bookings, alert users to changes, and optimize schedules on the go. This smart assistant transforms complex travel planning into a seamless, enjoyable process

PROPOSED SOLUTION

User Initiates Conversation

Through chatbot or UI, user shares details (e.g., "Plan a 4-day trip from Pune under ₹30,000").

- **Intent Extraction & Personalization**
- Watson Assistant collects parameters.
- Granite model processes user preferences and generates destination suggestions + draft itinerary.
- **Data Aggregation via Cloud Functions**
- Weather forecast, events, and travel options are fetched.
- Suggestions are refined (e.g., if rain is predicted, plan indoor activities).
- **Trip Plan Generation**
- Final day-wise itinerary is generated.
- Includes travel time, activity slots, hotel recommendations.
- **Booking (Optional)**
  - Booking simulations are done or redirected to third-party links.
- **Real-Time Optimization**
  - On trip start, changes (e.g., flight delay) are handled by re-planning via Granite and Cloud Functions.
  - Result:

SYSTEM APPROACH

1. User Interaction Layer (Frontend/UI)
2. Conversational Layer: IBM Watson Assistant (Lite)
3. AI Planning & Reasoning: IBM Granite Model
4. Backend Orchestration: IBM Cloud Functions
5. Data Layer: IBM Cloudant (NoSQL DB)
6. External API Integrations
7. Real-Time Adaptation and Alerts
8. System Flow Overview

ALGORITHM & DEPLOYMENT

Component	Purpose
Watson Assistant	Chat-based interaction
Granite Model API	Core trip planner (LLM)
IBM Cloud Functions	Backend processing
IBM Cloudant	Database
Weather & Travel APIs	External data

RESULT

The AI-powered Travel Planner Agent was successfully developed and deployed using IBM Cloud Lite services and IBM Granite large language models. The system intelligently planned personalized travel itineraries by understanding user inputs such as destination, interests, budget, and duration. The following are the key outcomes and observations from the implementation.

CONCLUSION

- The development of the AI-Powered Travel Planner Agent successfully demonstrated how artificial intelligence, cloud computing, and real-time data integration can transform the traditional travel planning process into a seamless and intelligent experience.
- By leveraging IBM Watson Assistant, IBM Granite large language models, Cloud Functions, and Cloudant, the system was able to:
- Accurately understand and process user preferences through natural language input.
- Generate personalized, optimized travel itineraries based on budget, interests, and duration.
- Integrate real-time data such as weather conditions and provide dynamic re-planning capabilities.
- Deliver an interactive and user-friendly chatbot interface for smooth communication.
- The solution is scalable, adaptable, and capable of integrating more advanced features such as real-time booking systems, voice input, and AI-driven travel cost optimization in the future.
- This project validates the potential of cloud-based AI agents to enhance user convenience, reduce manual effort, and provide smarter travel recommendations, making the overall planning experience more efficient and enjoyable.

FUTURE SCOPE

- 1. Real-Time Booking Integration
- 2. Voice-Based Assistant
- 3. Advanced Personalization Using AI
- 4. Multi-modal and Multi-city Trips
- 5. Augmented Reality (AR) Integration
- 6. Crowdsourced & Social Recommendations
- 7. Security & Authentication Enhancements
- 8. Mobile App Deployment
- 9. Multilingual Support

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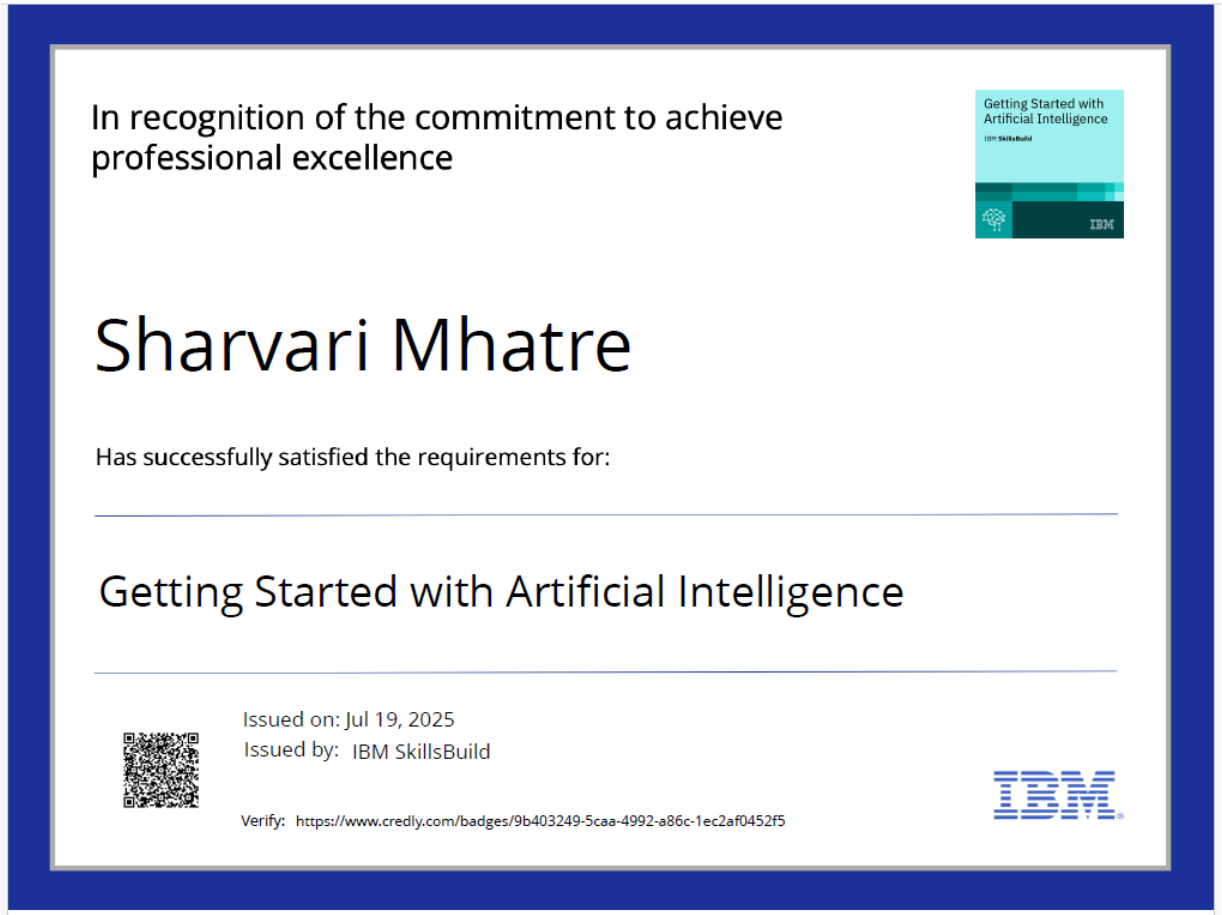
IBM CERTIFICATIONS



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IBM **SkillsBuild** Completion Certificate

This certificate is presented to

Sharvari Mhatre

for the completion of

Lab: Retrieval Augmented Generation with LangChain

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According to the Adobe Learning Manager system of record

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