CAPSTONE PROJECT

TRAVEL PLANNER AGENT

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OUTLINE

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

PROBLEM STATEMENT

A **Travel 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

The proposed system is an intelligent **AI-based Travel Planner Agent** that helps users seamlessly plan trips by leveraging AI models and real-time APIs.

1. User Preference Input

Collects data on user preferences like budget, duration, destination types (beach, mountain, heritage, etc.), and travel dates.

Offers both manual input and voice-based interaction.

2. Dynamic Itinerary Builder

Automatically creates personalized itineraries with activities, places to visit, estimated durations, and travel mode.

Suggests alternatives for weather or crowd-related conditions.

3. Real-Time Integration

Uses real-time APIs (maps, weather, transport) to update travel conditions, ETA, and suggest optimized travel routes.

Adjusts the plan dynamically if disruptions occur (e.g., flight/train delays, weather warnings).

4. Recommendation Engine

Suggests hotels, restaurants, and local experiences based on user history and ratings.

Uses collaborative filtering or content-based recommendation techniques.

5. Budget Planner

Calculates trip costs and keeps users informed about budget constraints.

Offers cost-saving suggestions like alternate stays, transport modes, or time slots.

6. User Interface

Web or mobile app interface with intuitive design.

Displays itinerary, map route, booking options, and notifications.

7. Deployment

Hosted using cloud platforms (IBM Cloud / AWS / Firebase).

Ensures scalability, real-time access, and user session persistence.

SYSTEM APPROACH

System requirements

Hardware:

- Laptop/PC with at least 4GB RAM
- Internet connection

Software:

- **Operating System:** Windows 10
- **Cloud Platform:** IBM Cloud
- **Database:** IBM Cloudant (for storing trip data, user sessions, preferences)
- **AI Services:** IBM Watsonx (for intelligent travel recommendations, itinerary generation, NLP interactions)

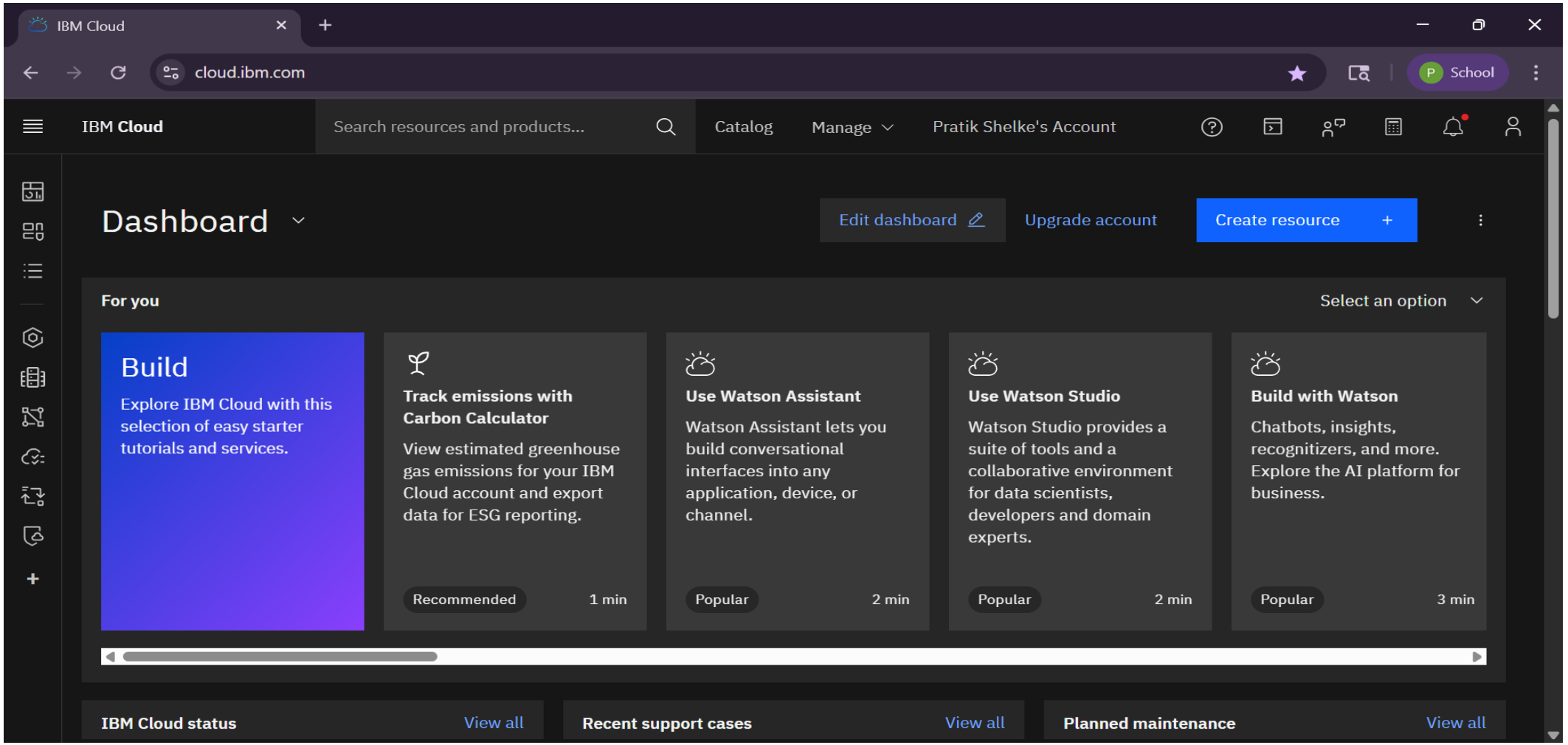
APIs:

- IBM Watsonx Knowledge Studio (for customizing travel logic)
- IBM Watsonx.ai (for model deployment or inferencing)

TOOLS

- **IBM Watsonx.ai** – For building and deploying travel recommendation and itinerary models.
- **IBM Watsonx Assistant (optional)** – For creating a natural conversation interface.
- **IBM Cloud Functions** – To handle business logic like fetching live data or booking updates.
- **IBM Cloudant –** To store user profiles, trip logs, and historical planning data.
- **IBM AppID (optional) –** For secure user login and authentication.
- **IBM Object Storage (optional) –** To store travel images, maps, or document uploads.IBM Monitoring & Logs – For monitoring app usage, errors, and feedback.

RESULT



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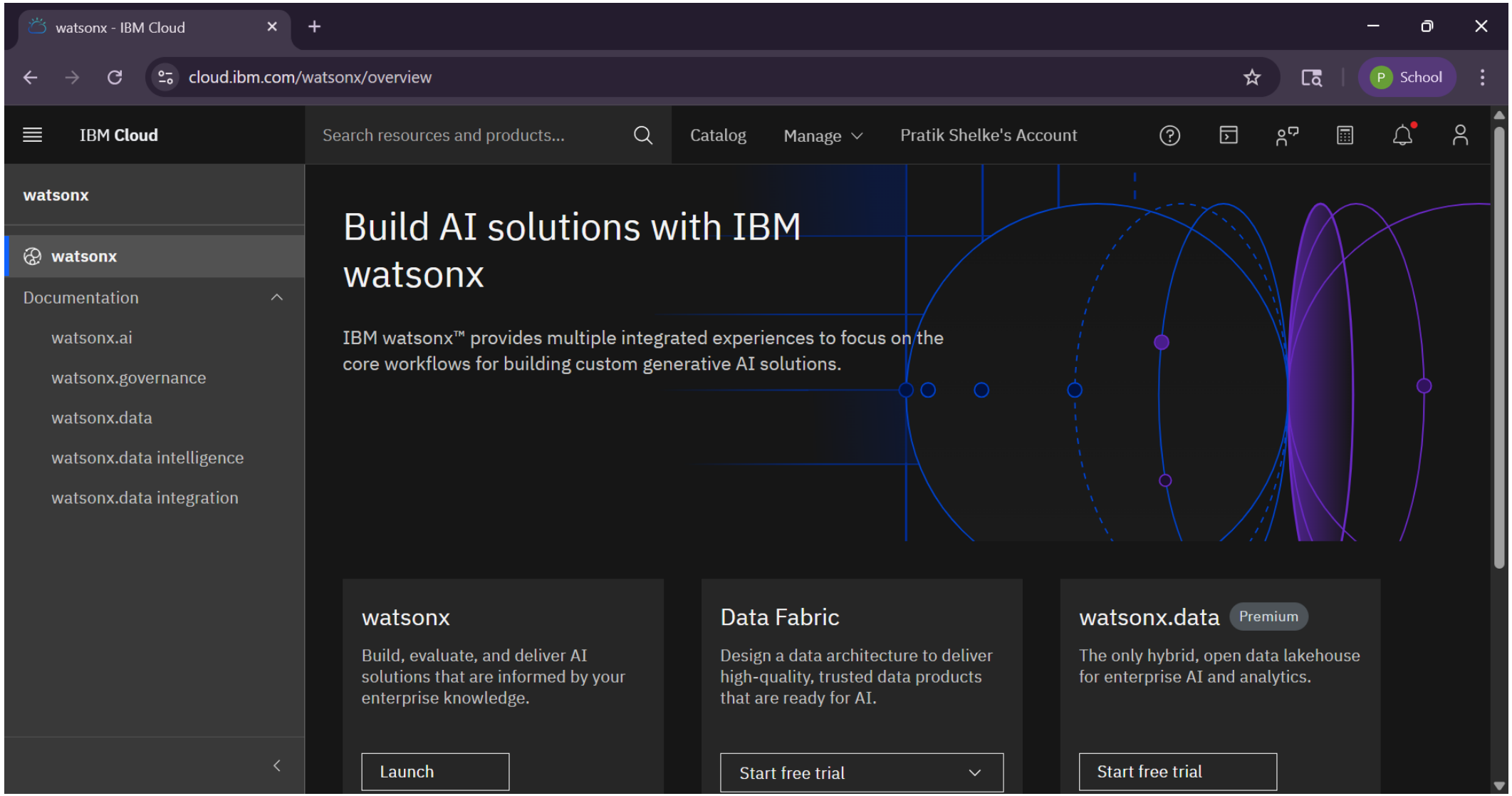

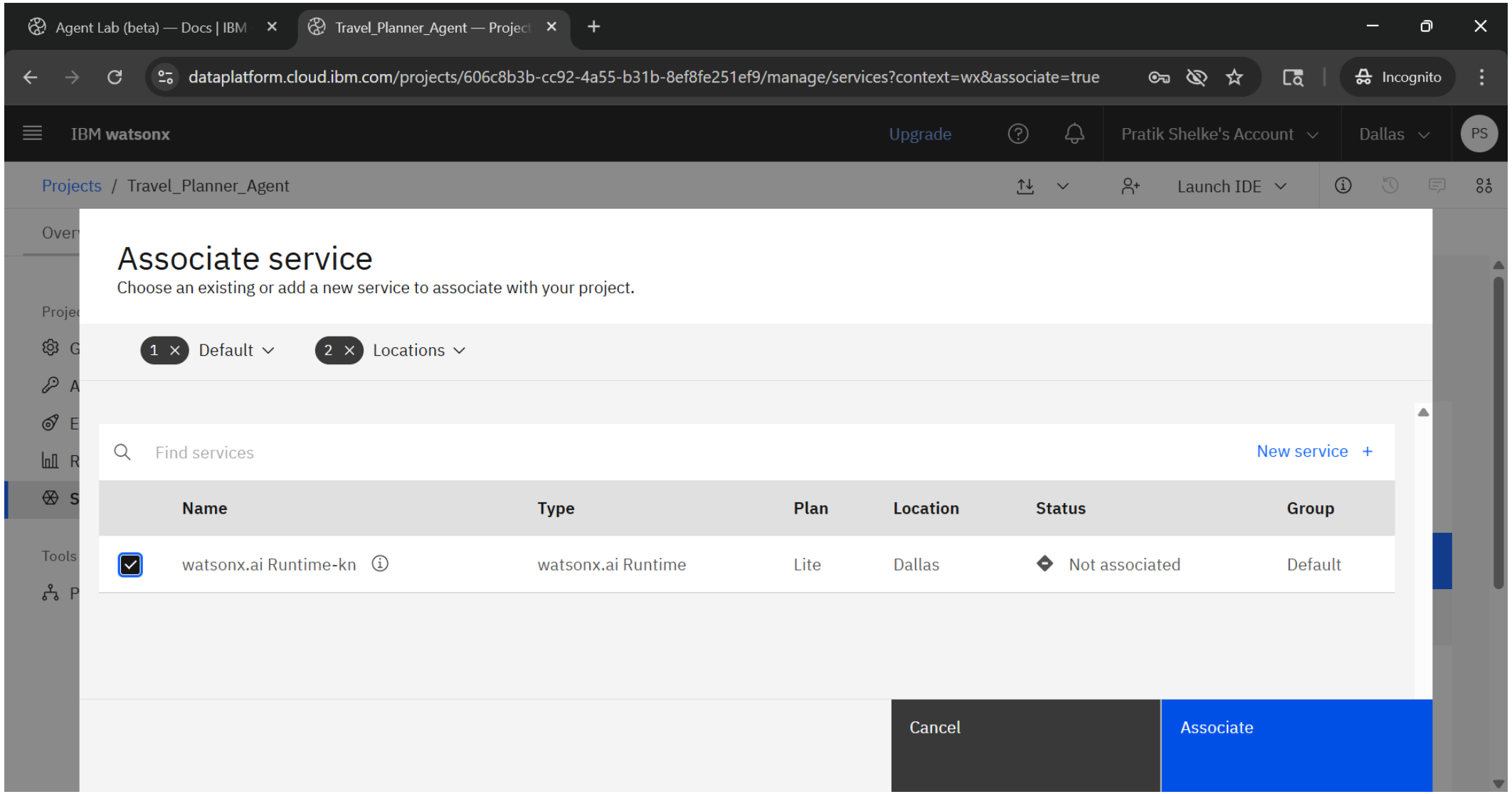

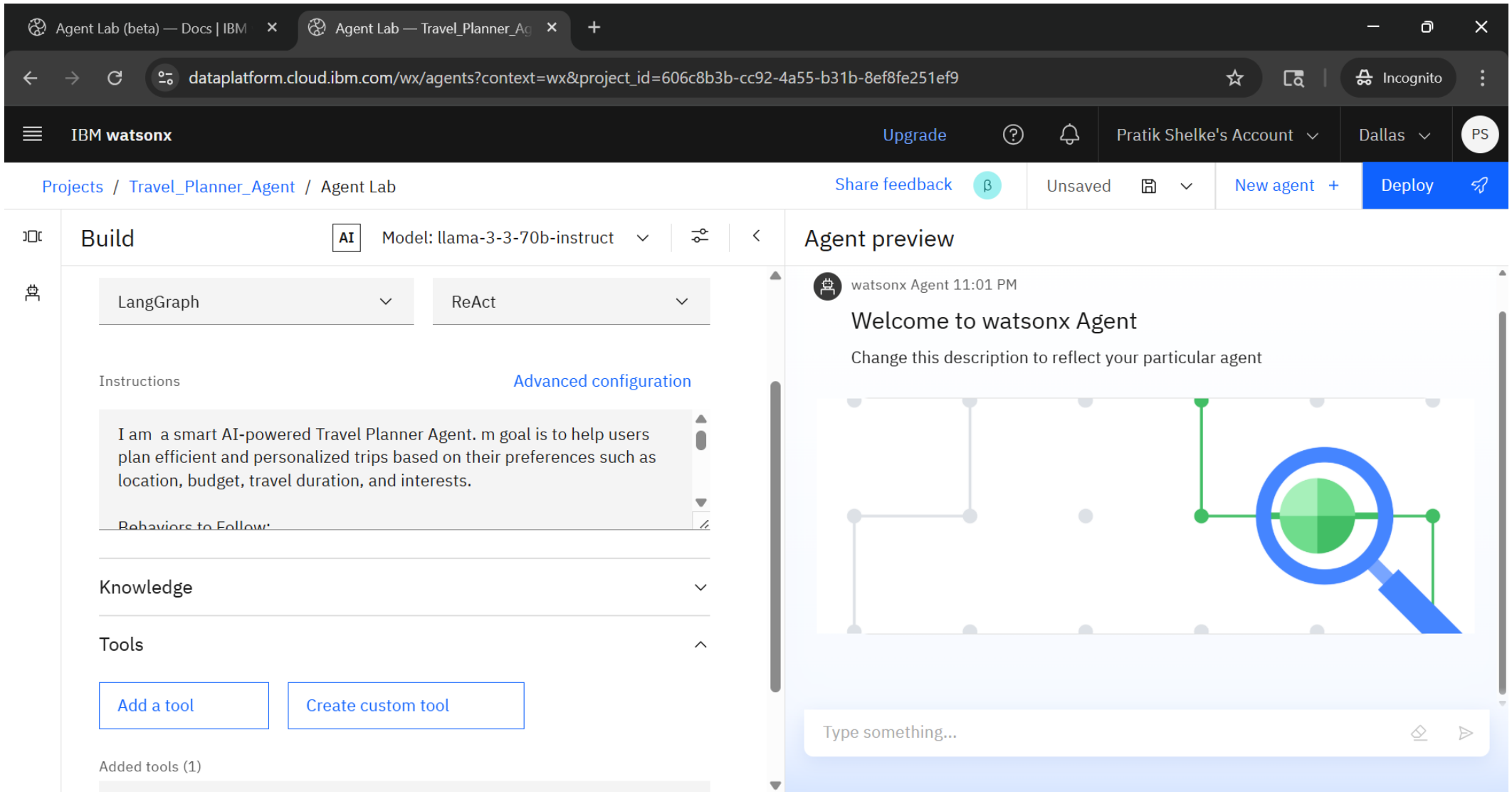

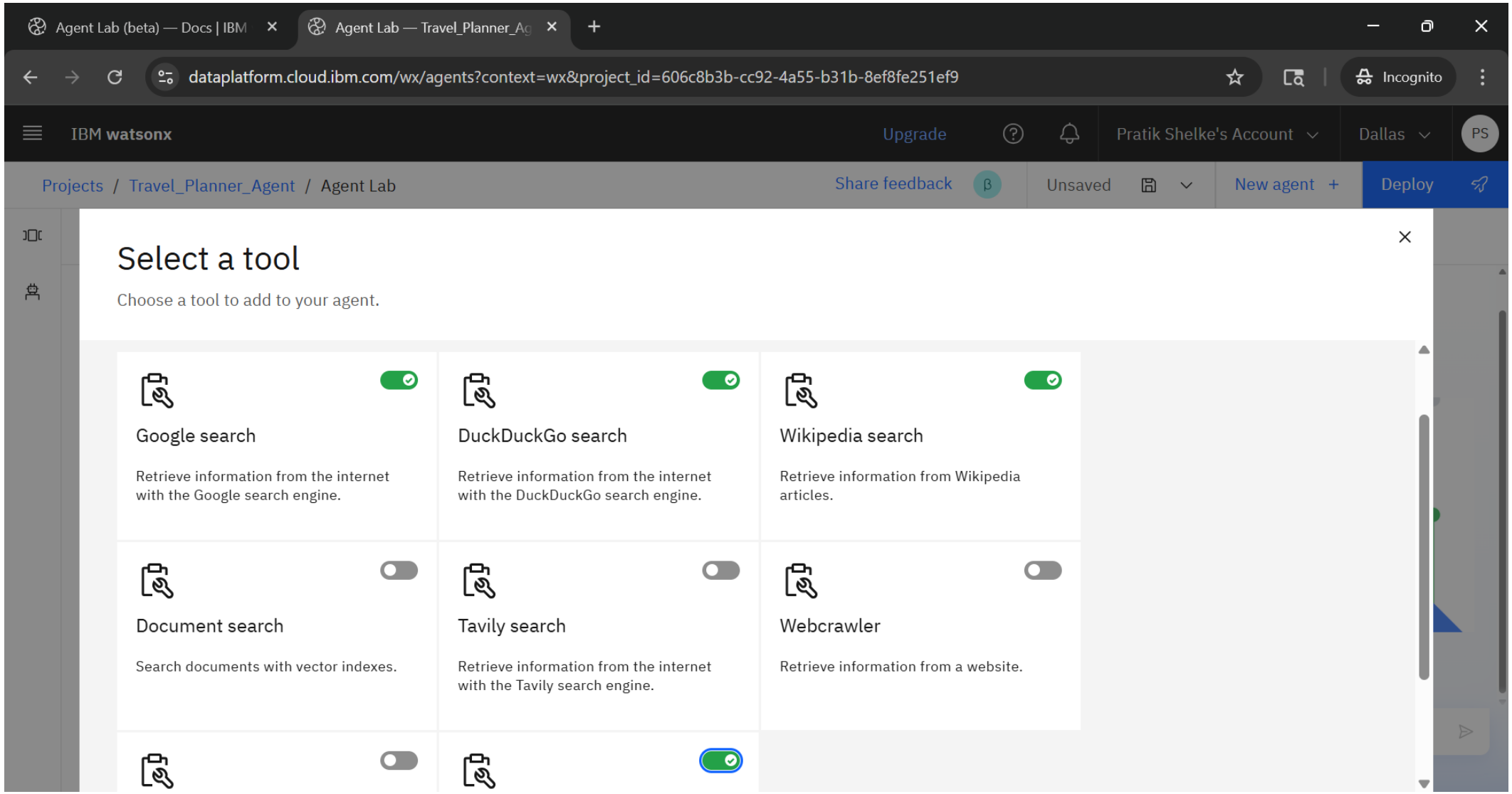

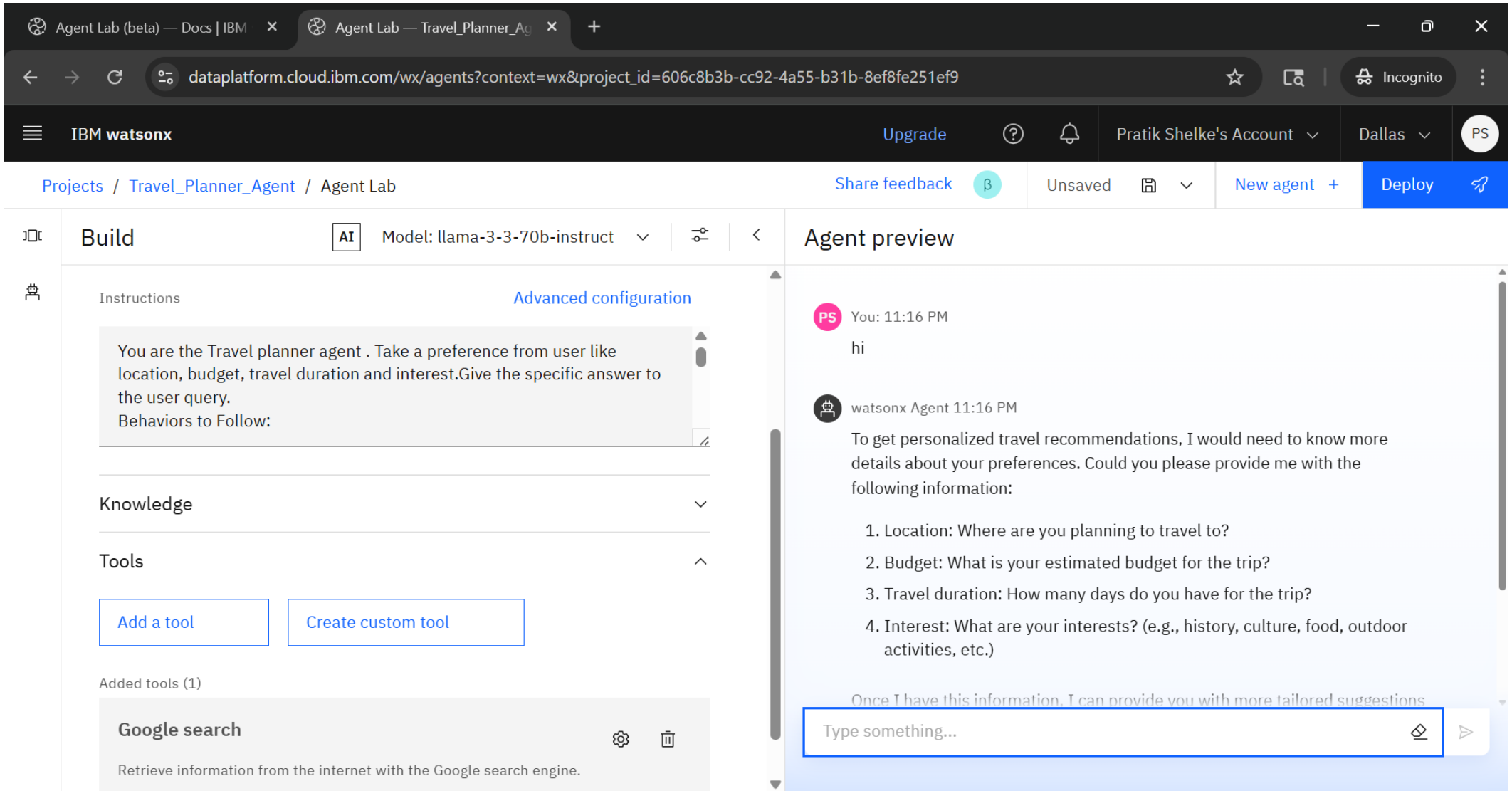

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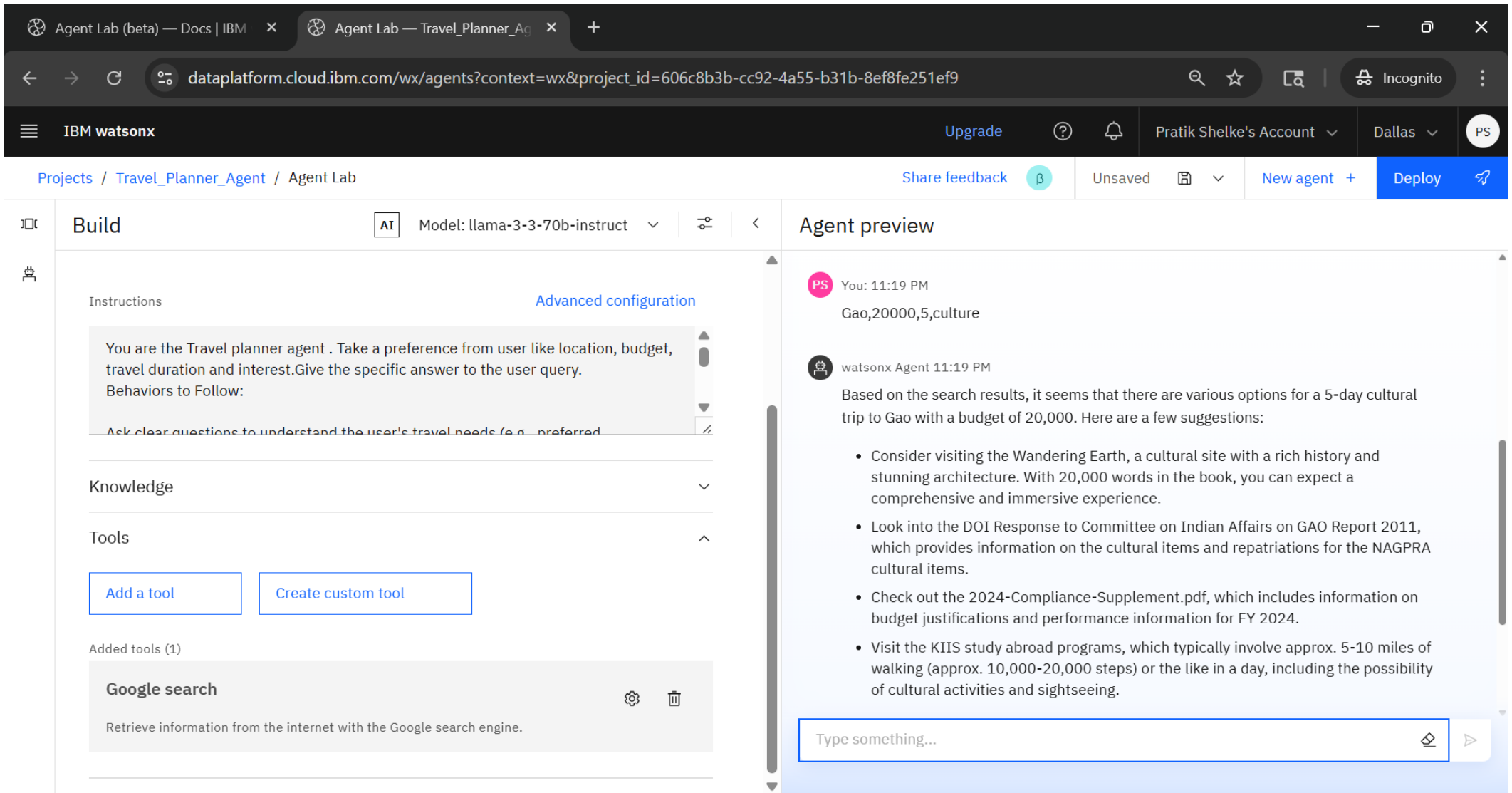

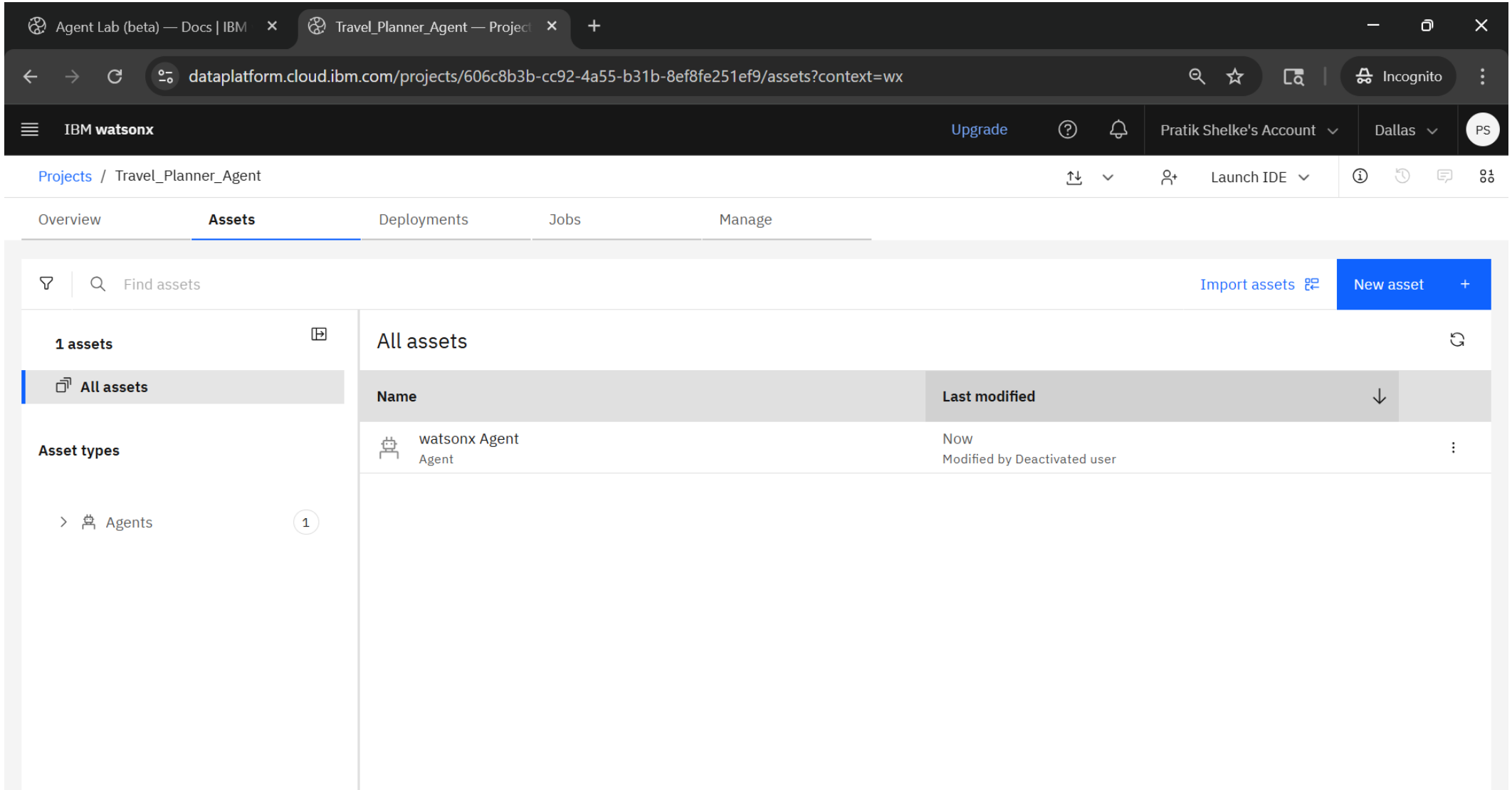

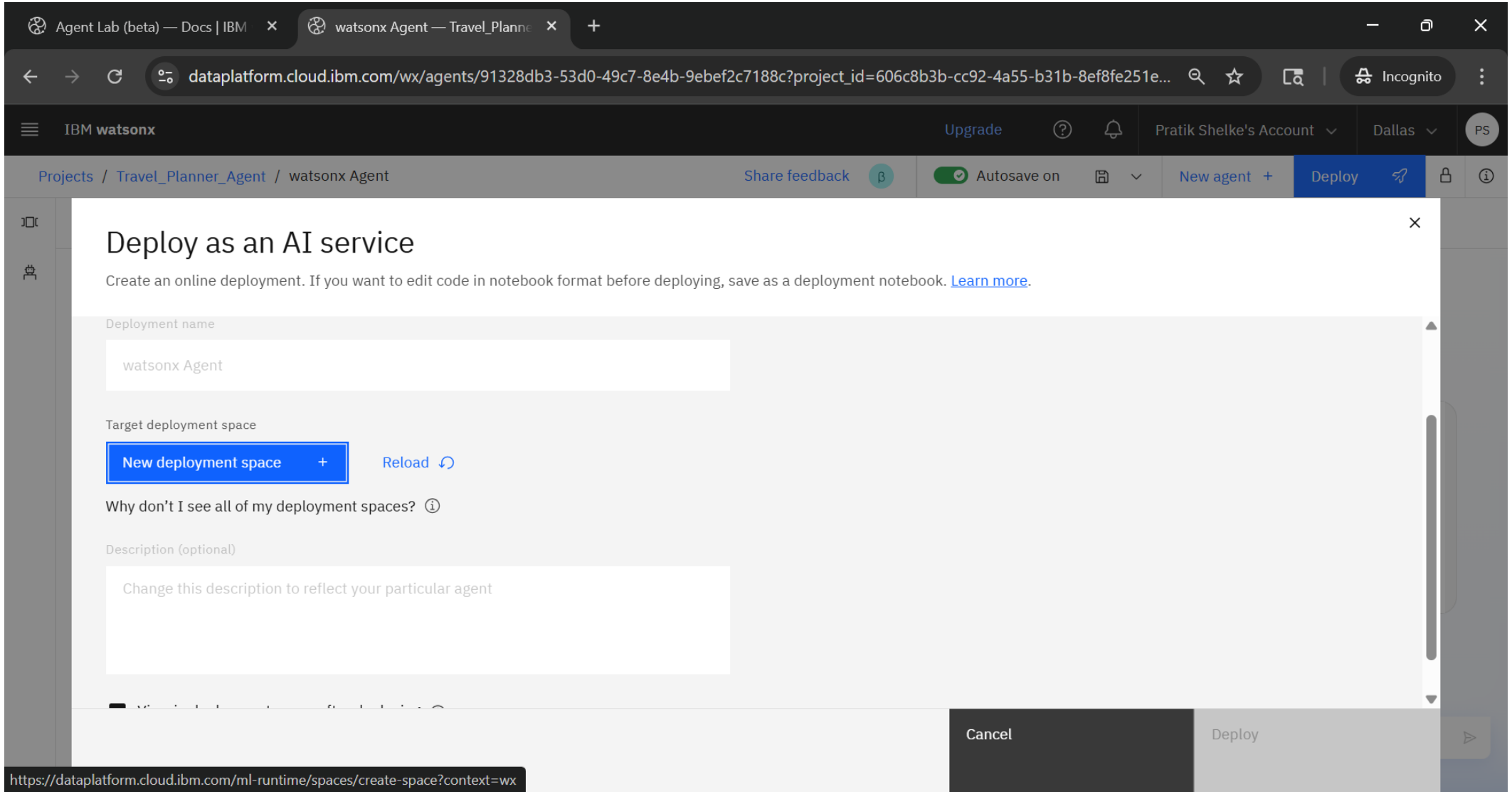

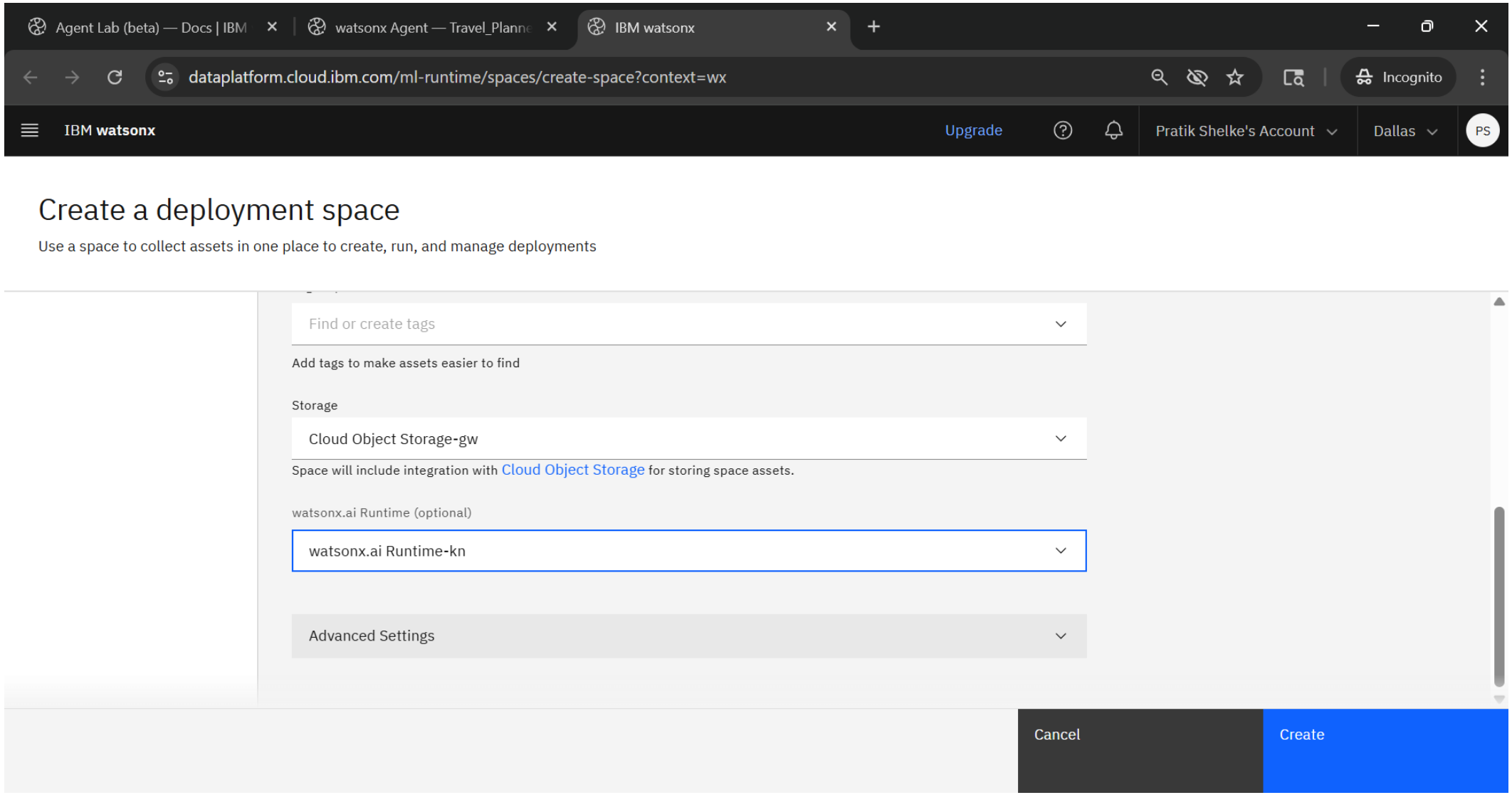

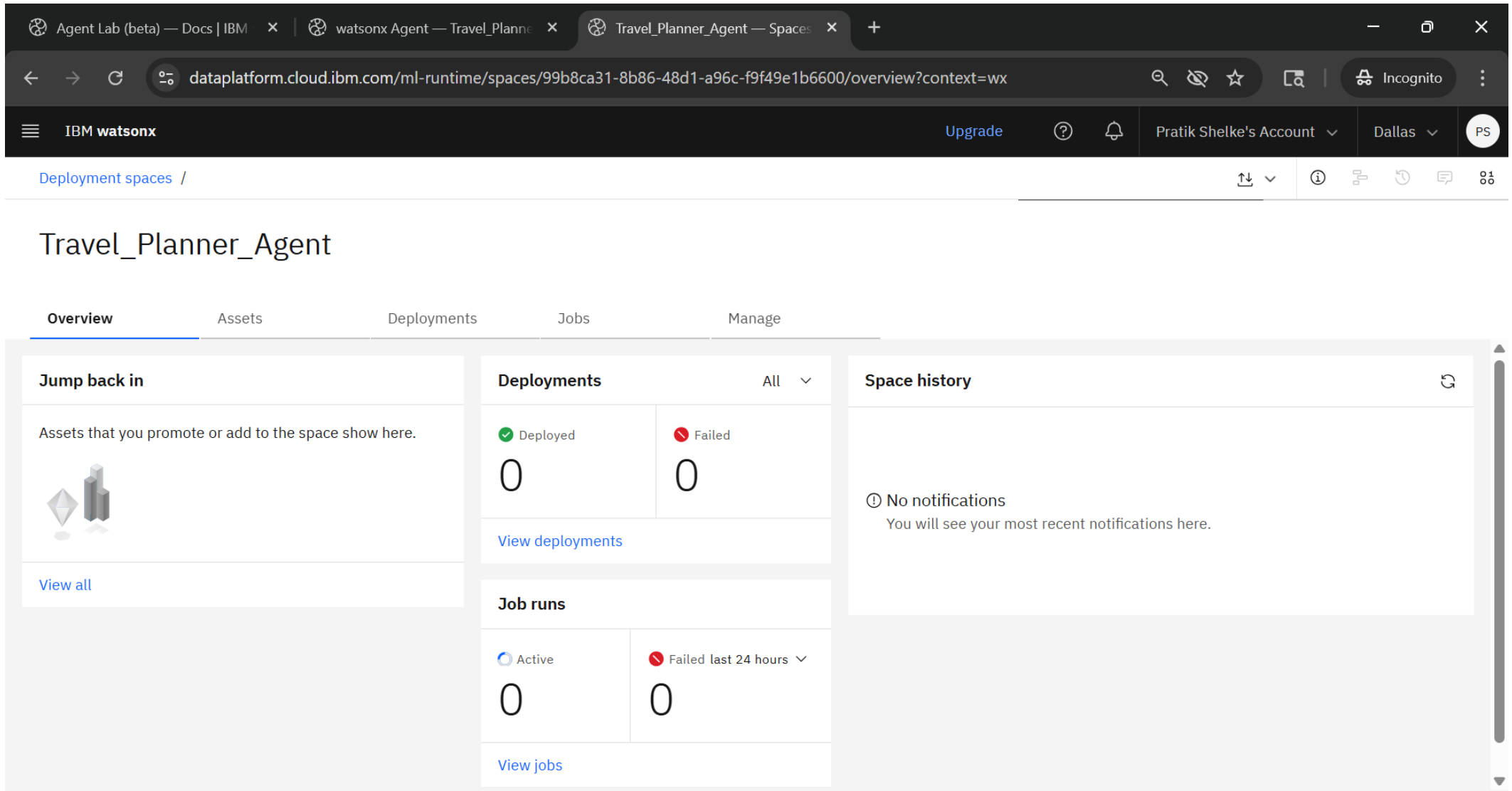

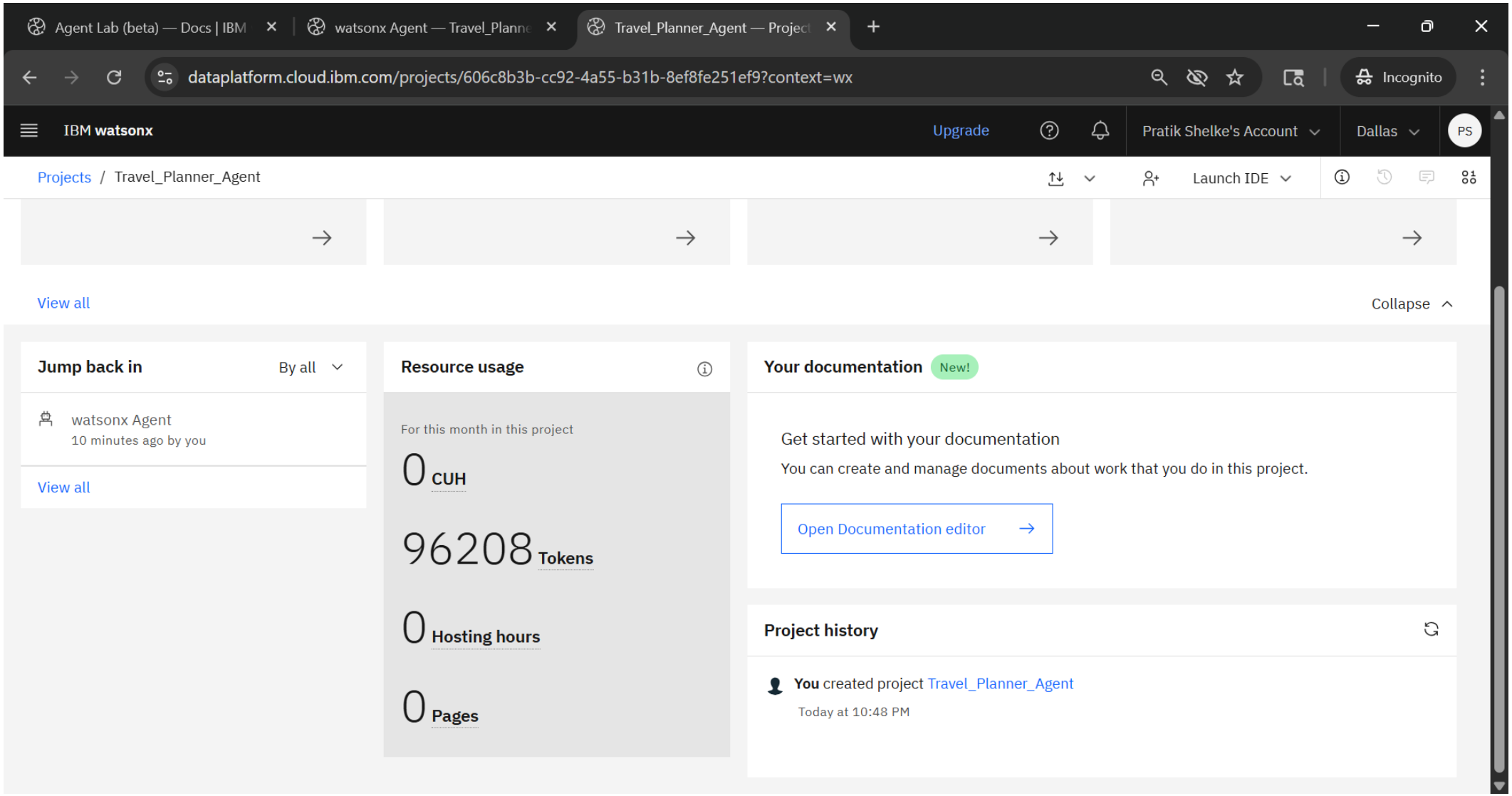

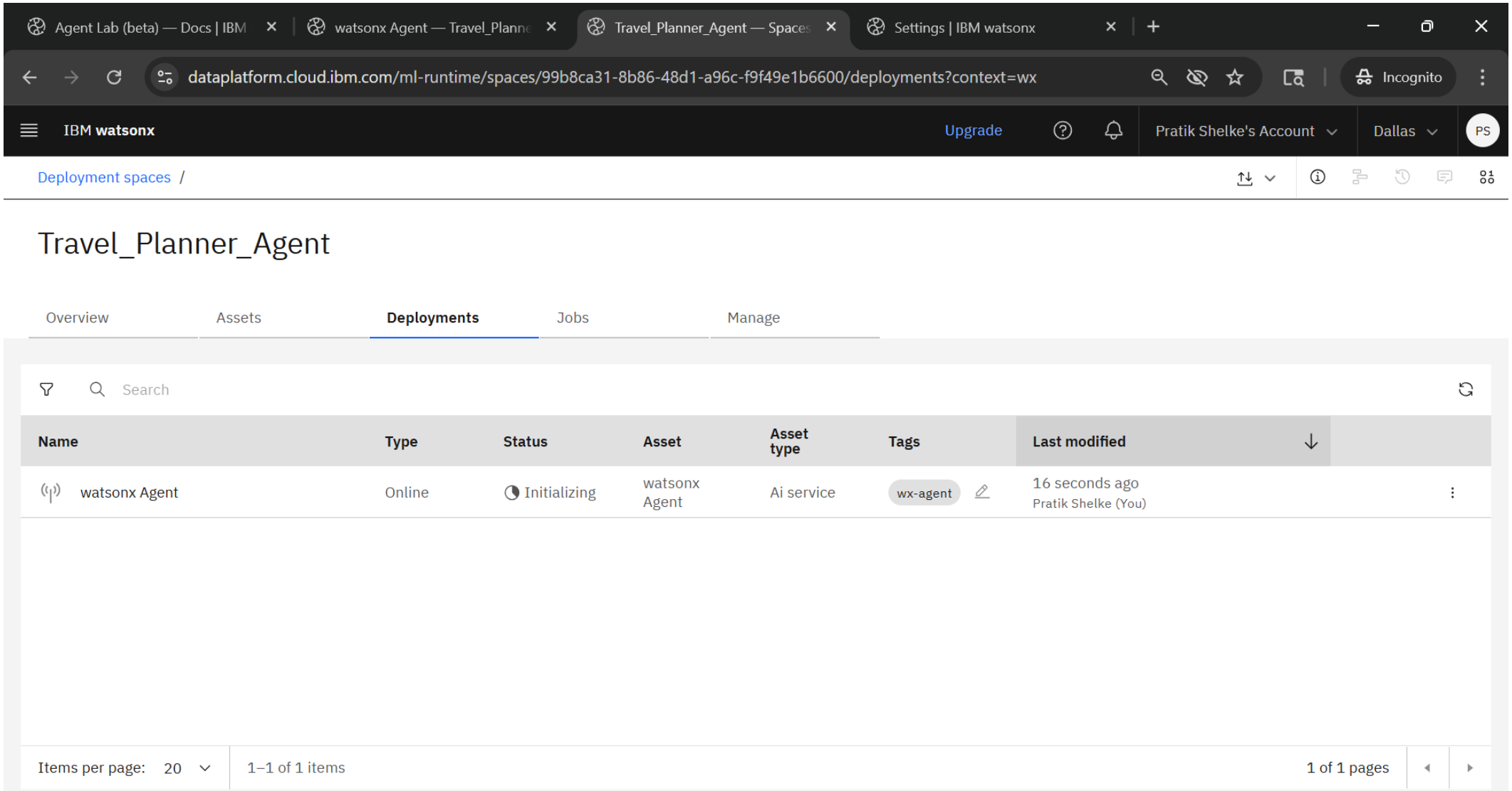

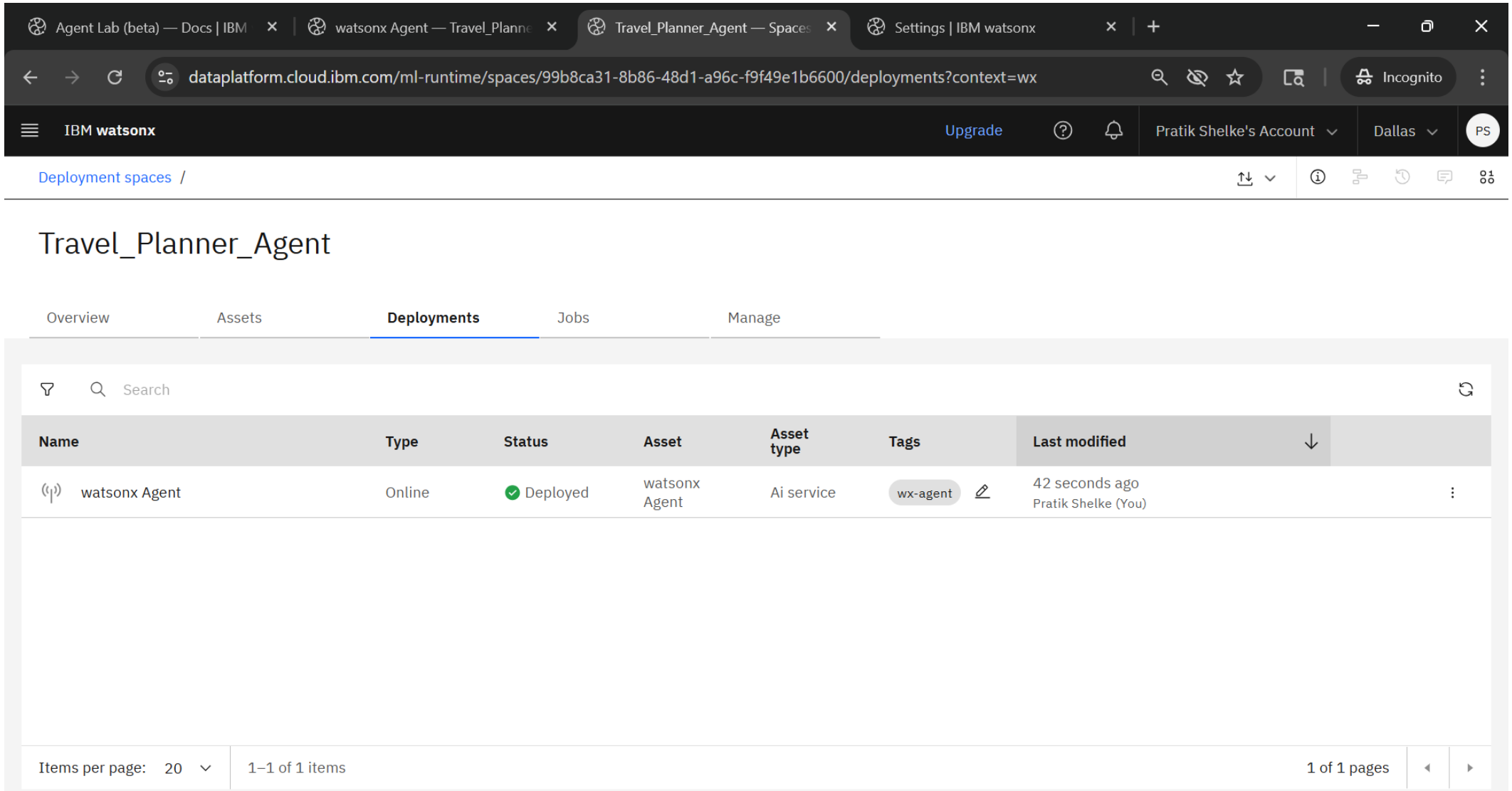

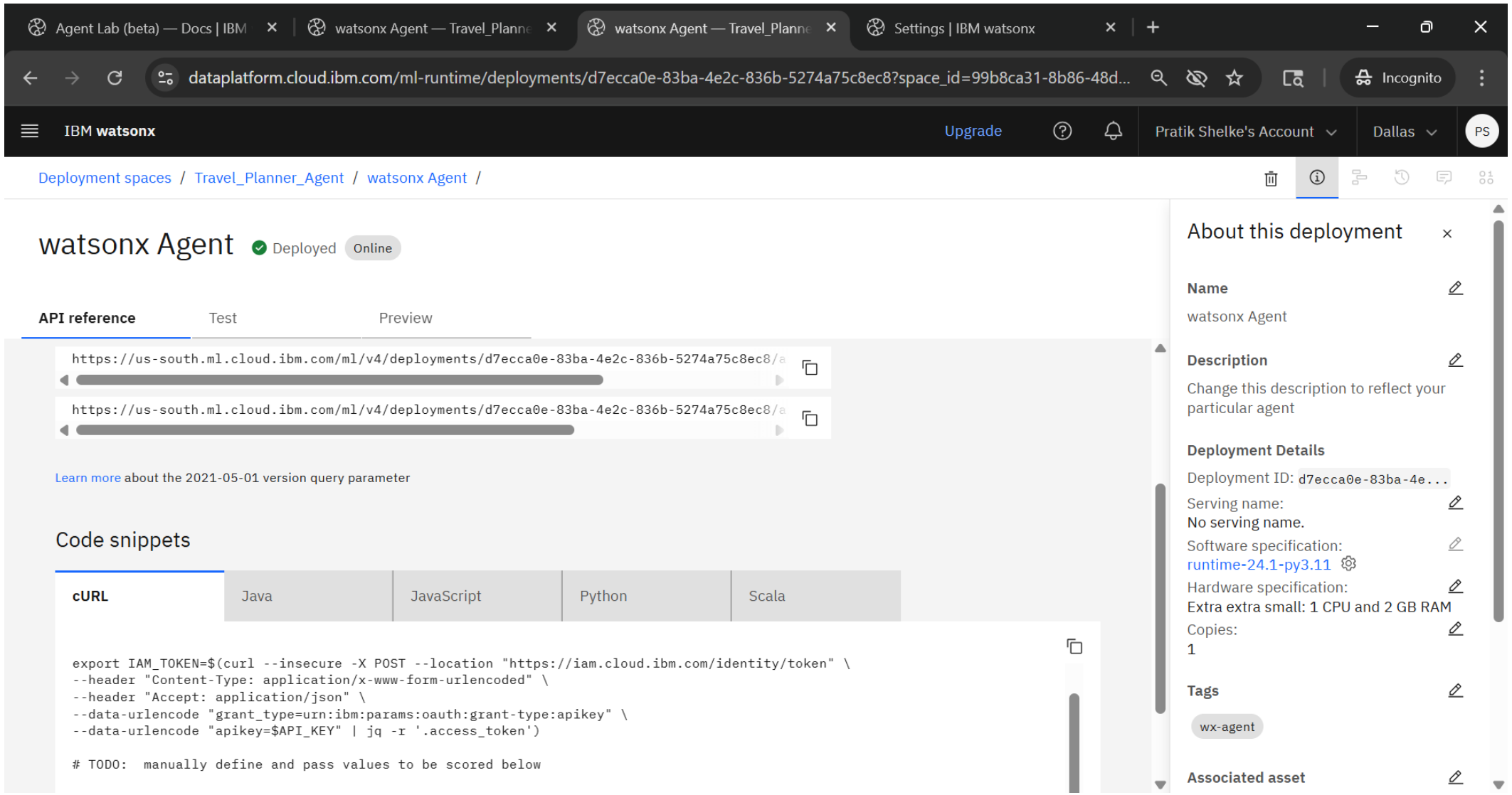

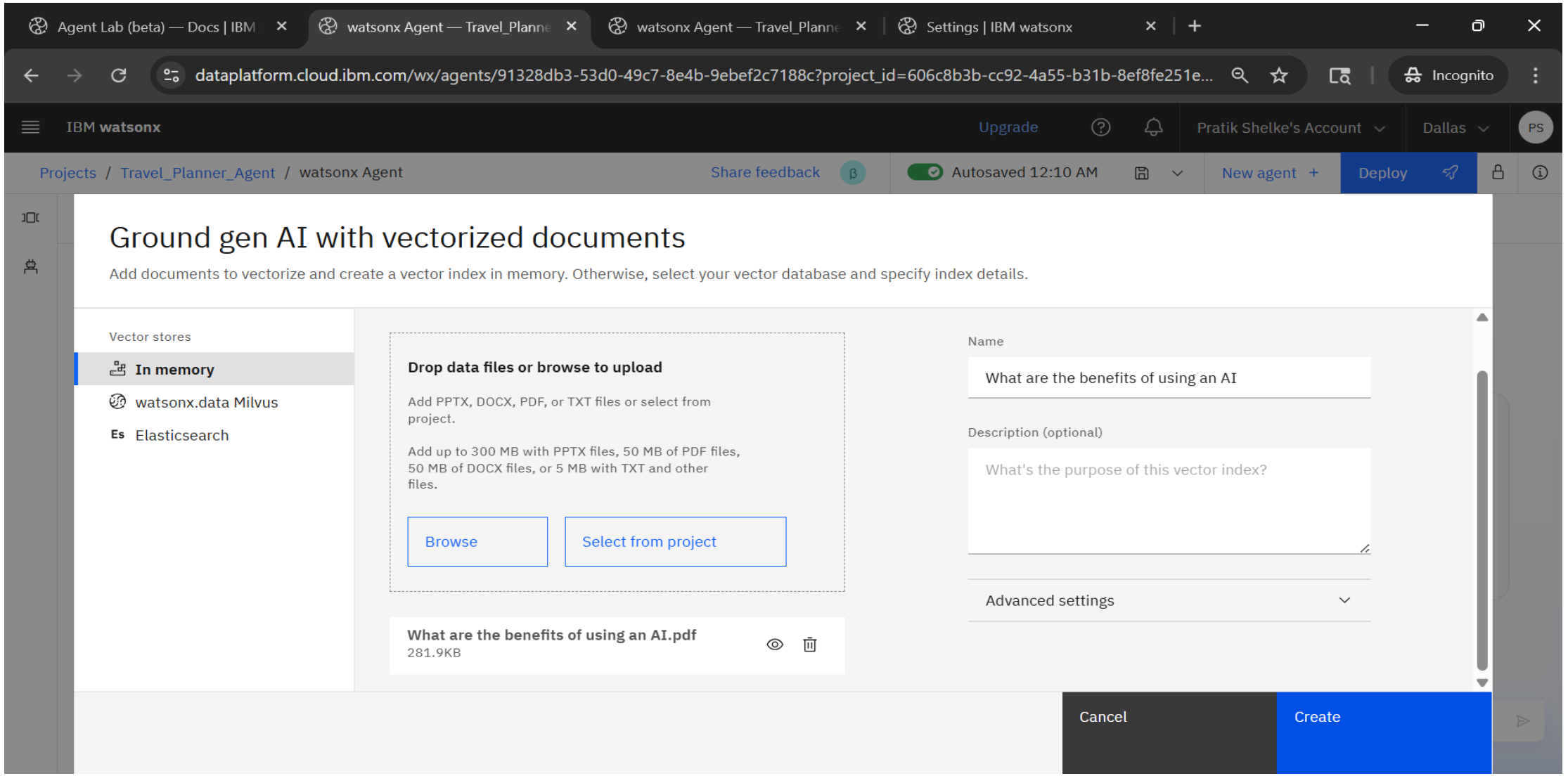

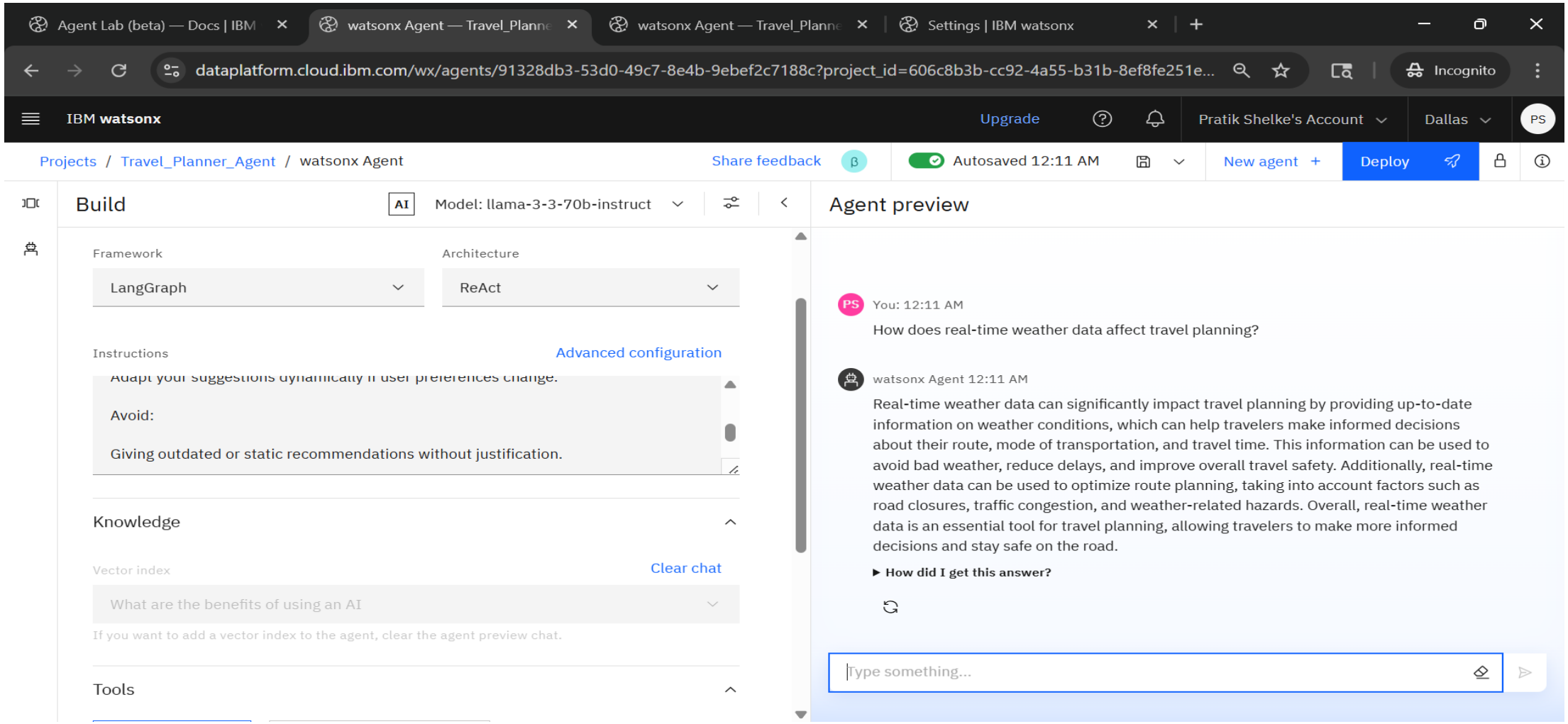

CONCLUSION

- The Travel Planner Agent offers a smart and scalable solution for modern travel planning challenges. It combines AI, real-time data, and personalization to assist users in creating effective travel plans. The system's modular design ensures flexibility, and the integration with real-time APIs ensures adaptability, making it a valuable tool for both casual travelers and frequent explorers.

FUTURE SCOPE

- Group trip collaboration
- Conversational planning via Watsonx Assistant
- Budget tracking with AI insights
- Real-time location alerts
- Multilingual support with Watsonx NLP
- Travel history analytics and suggestions

REFERENCES

- Google Maps API – https://developers.google.com/maps
- OpenWeather API – https://openweathermap.org/api
- IBM Cloudant – https://www.ibm.com/cloud/cloudant
- IBM Watson Assistant – https://www.ibm.com/cloud/watson-assistant

GETTING STARTED WITH ARTIFICIAL INTELLGENCE

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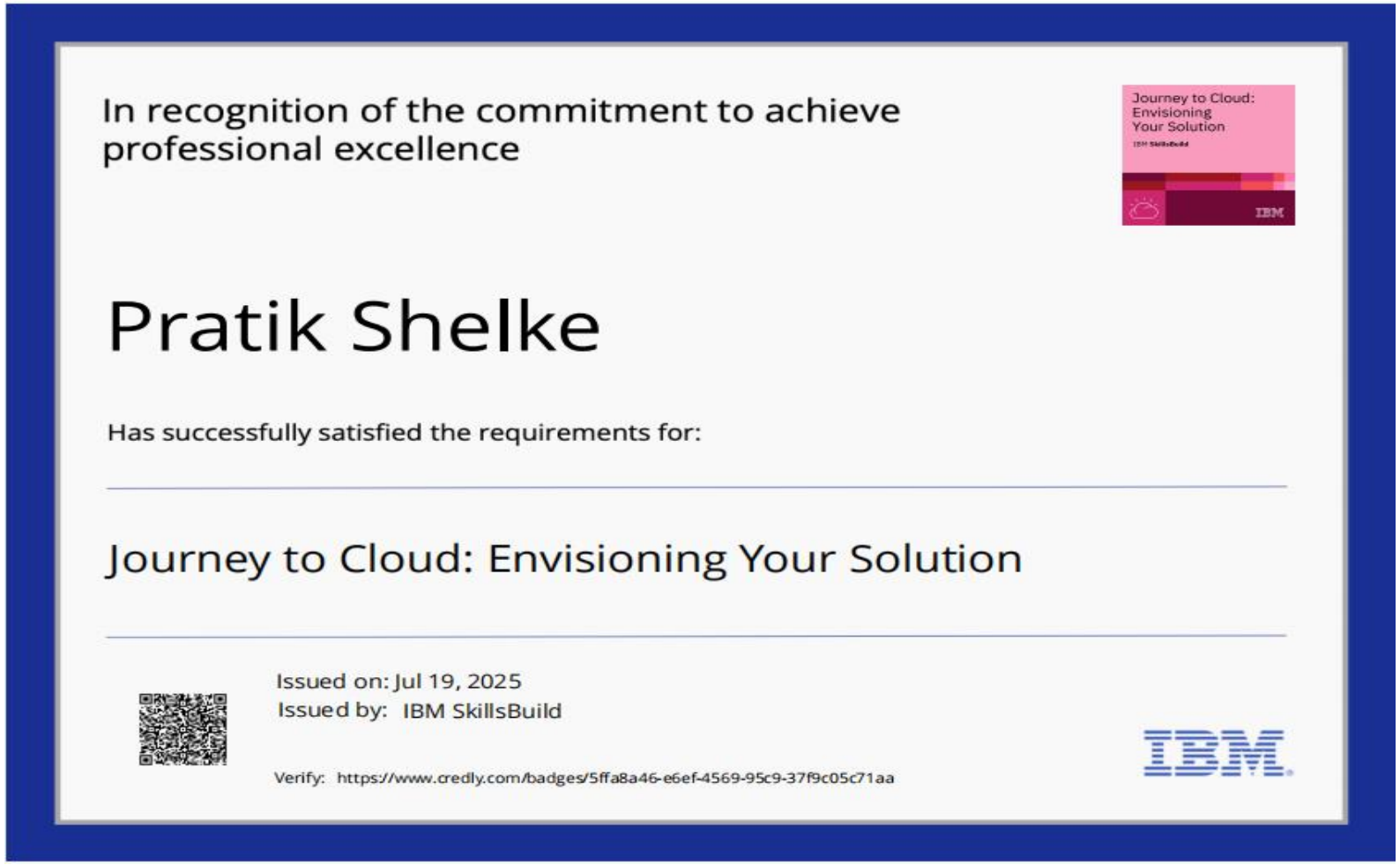
JOURNEY TO CLOUD ENVISIONING YOUR SOLUTION



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