AGENTIC AI PROJECT

Agentic AI Health Symptom Checker

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OUTLINE

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Problem Statement

An Agentic AI Health Symptom Checker helps users understand their health conditions by analyzing symptoms and providing probable causes, preventive advice, and care recommendations. It retrieves verified medical data, symptom databases, and guidelines from trusted sources like WHO, government health portals, and medical journals. Users can input symptoms in natural language such as “I have a sore throat and fever,” and the agent provides possible conditions, urgency level, home remedies, and when to consult a doctor. It supports multi-language interaction and avoids self-diagnosis risks by offering educational and referral-based suggestions. This AI-driven assistant promotes early detection, reduces misinformation, and empowers users to take informed health actions.

Proposed Solution

The proposed solution aims to empower individuals to make informed health decisions by using an Agentic AI assistant that interacts in natural language, understands symptoms, and responds with verified, educational, and non-diagnostic guidance.

It utilizes IBM Watsonx.ai, Granite language models, and IBM Cloud Lite services to:

- Analyse user-described symptoms in any language
- Extract relevant symptoms using granite-3-3b-instruct model
- Retrieve accurate information from trusted sources (WHO, CDC, government portals)
- Provide structured responses including:
  - Possible health conditions
  - Urgency level
  - Preventive tips and home remedies
  - Recommendations on when to consult a doctor
- Ensure safe interaction by including a disclaimer against self-diagnosis

System Approach

Interaction Flow:

1. User inputs symptoms to the agent
2. Extract key symptoms (Granite LLM)
3. Query verified health data from IBM services
4. Generate output:
    - Possible causes
    - Urgency
    - Home care guidance
    - Doctor referral advice
5. Proceed further to the response

Algorithm & Deployment

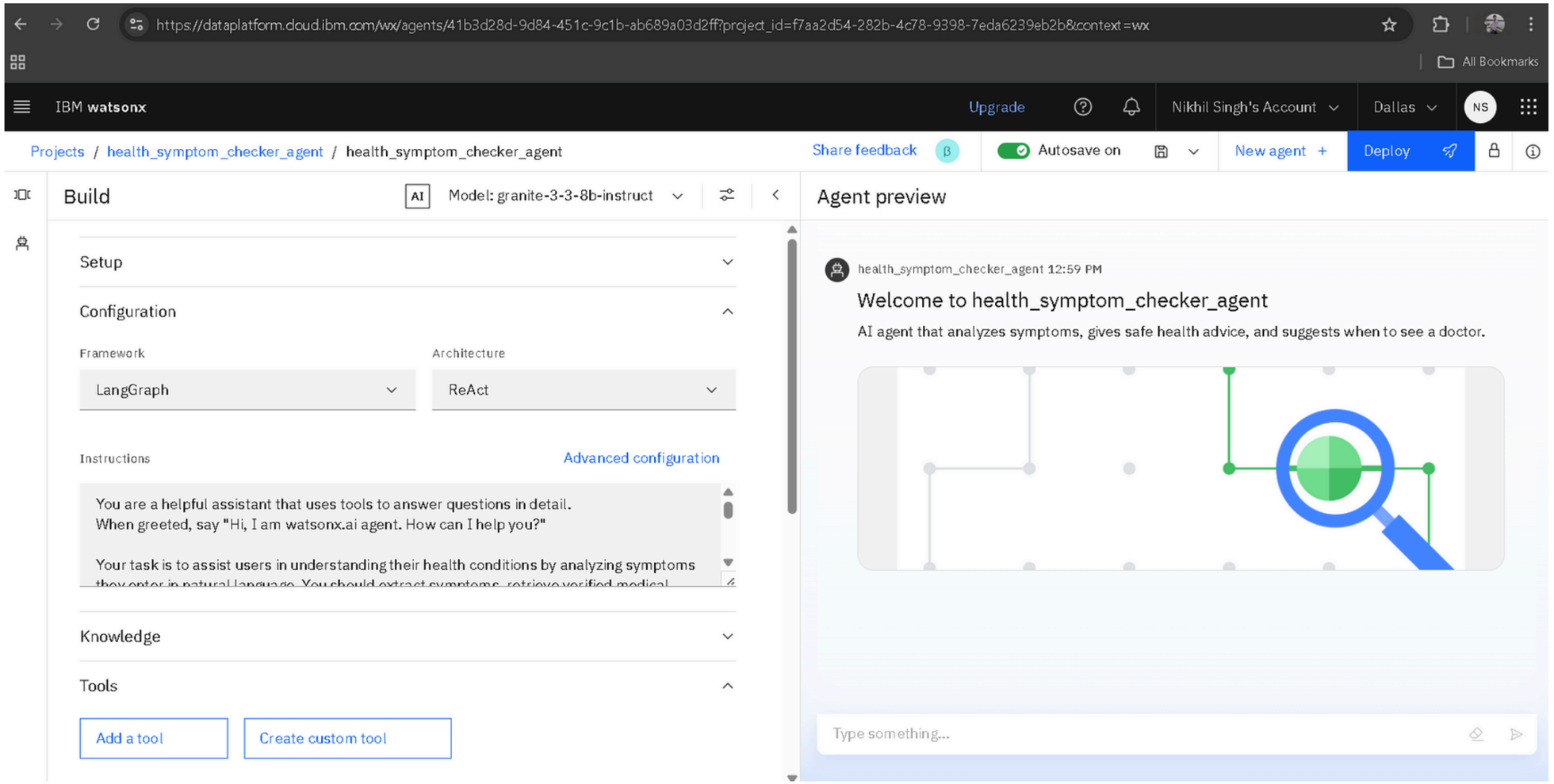
Algorithm Overview

- User inputs symptoms in plain text
- Granite model (granite-3-3b-instruct) extracts symptom entities
- Fetch verified guidance from IBM Cloud Object Storage
- Response generated with:
  - Possible conditions
  - Urgency level
  - Preventive tips
  - Disclaimer: “This is not a medical diagnosis. Please consult a certified doctor.”

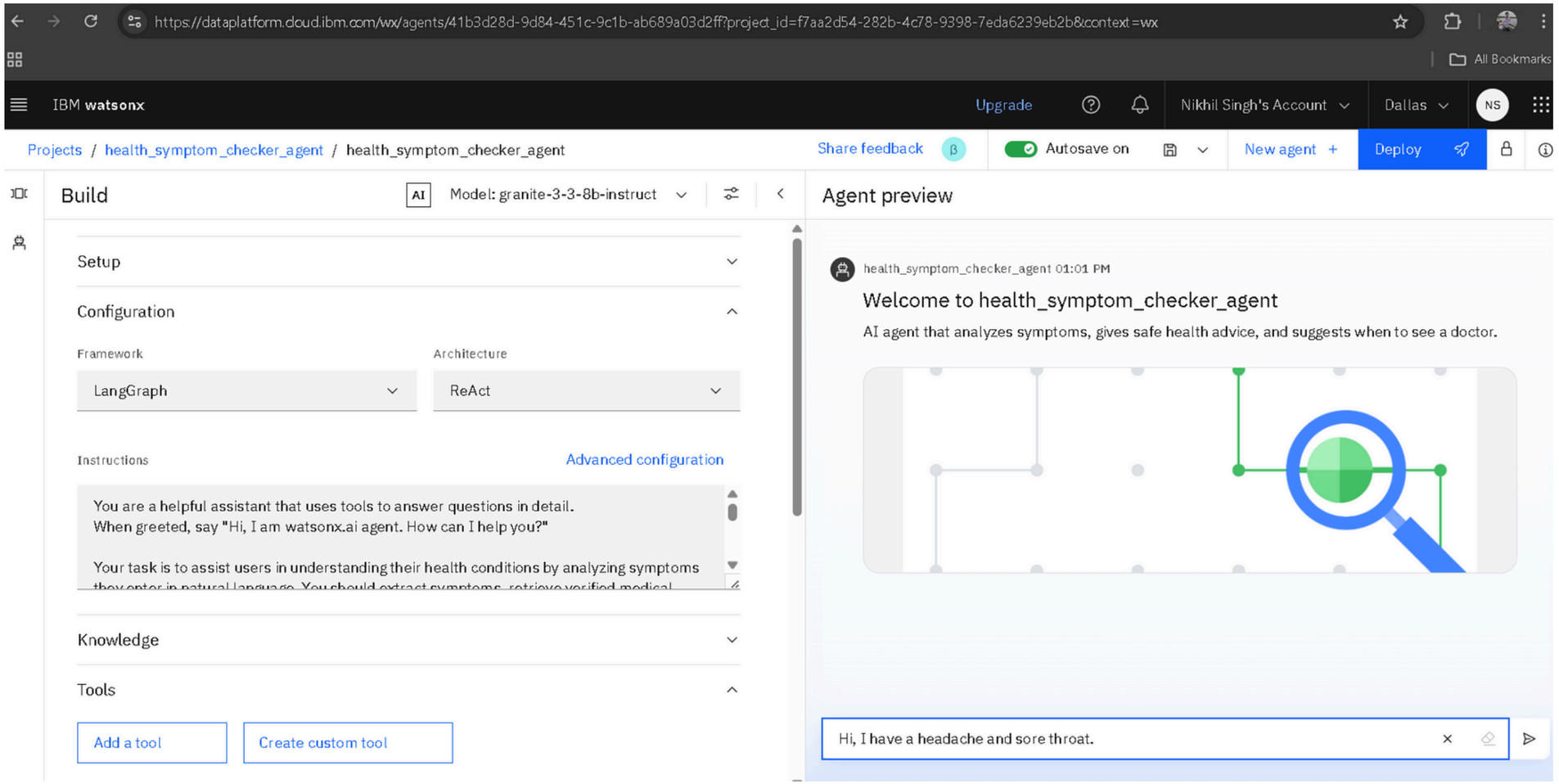
Deployment

- Hosted entirely on IBM Cloud Lite
- AI Agent configured in watsonx.ai
- Modular, scalable microservices architecture

Result



Result



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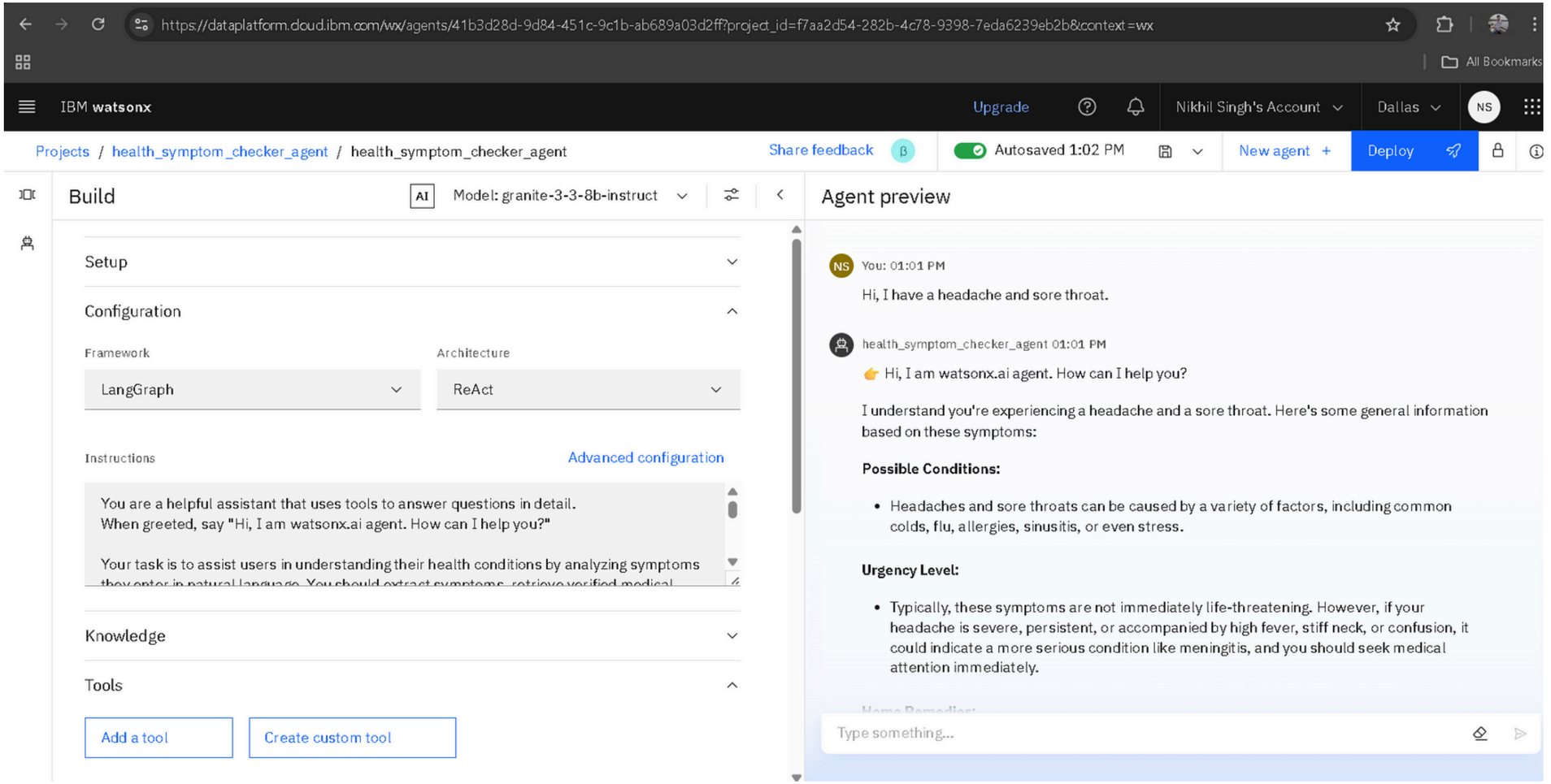
Result



Conclusion

- The implementation of the Agentic AI Health Symptom Checker proved effective in providing users with accurate, safe, and informative health guidance based on natural language symptom input. The use of IBM Watsonx.ai and Granite models enabled precise symptom extraction and structured responses grounded in verified medical data.
- While the solution successfully avoided diagnostic risks and maintained educational value, challenges included integrating trusted data sources and maintaining real-time responsiveness within resource-constrained IBM Cloud Lite limits.
- Future improvements could focus on enhancing condition specificity and expanding the knowledge base with more localized health content.

Future scope

- **Expand Medical Data Sources:** Integrate more government health portals, clinical datasets, and real-time epidemic data for richer insights.
- **Algorithm Optimization:** Refine symptom-matching logic and urgency estimation for faster and more accurate responses.
- **Regional Expansion:** Adapt the system to support city/state-specific health trends, climate-related illnesses, and localized medical advice.
- **Edge Computing Integration:** Deploy edge-based symptom checkers in rural clinics or low-bandwidth areas for real-time offline support.
- **Advanced ML Techniques:** Incorporate user feedback loops, health trend predictions, and risk profiling using advanced AI/ML models.

References

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5. Wikipedia, DuckDuckGo, and Google Search – For educational lookup through agent tool invocation
6. "Explainable AI for Healthcare: A Survey", ACM Computing Surveys, 2021

IBM Certifications

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IBM **SkillsBuild** Completion Certificate

This certificate is presented to

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for the completion of

Lab: Retrieval Augmented Generation with LangChain

(ALM-COURSE_3824998)

According to the Adobe Learning Manager system of record

Completion date: 25 Jul 2025 (GMT) **Learning hours:** 20 mins

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