CAPSTONE PROJECT

AGENTIC AI FOR PERSONALIZED COURSE PATHWAY

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OUTLINE

- Problem Statement (Should not include solution)
- Proposed System/Solution
- System Development Approach (Technology Used)
- Algorithm & Deployment
- Result (Output Image)
- Conclusion
- Future Scope
- References



PROBLEM STATEMENT

With the abundance of online learning resources, students often face difficulty in choosing the right learning path that aligns with their goals and skill levels. The lack of personalized career guidance makes it hard to stay motivated and follow a structured learning journey..



PROPOSED SOLUTION

- LearnMate is an Agentic AI system that acts as a personalized AI career coach.
- It interacts with students, understands their interests (e.g., Frontend, Cybersecurity, UI/UX), assesses their skill level, and generates a customized 3-step learning roadmap.
- It also adapts over time based on feedback using IBM Watsonx.ai and IBM Granite models.



SYSTEM APPROACH

System requirements:

- IBM Cloud Lite
- Watsonx.ai Prompt Lab
- Ilama-3-3-70b Instruct

ModelLibraries/Tools:-

- IBM Watsonx.ai Agentic Lab (Prompt Lab)
- Prompt Template deployment
- Deployment space with Watsonx Runtime



ALGORITHM & DEPLOYMENT

No classical ML algorithm is used. Instead, IBM's Granite LLM is prompted and deployed as an agent.

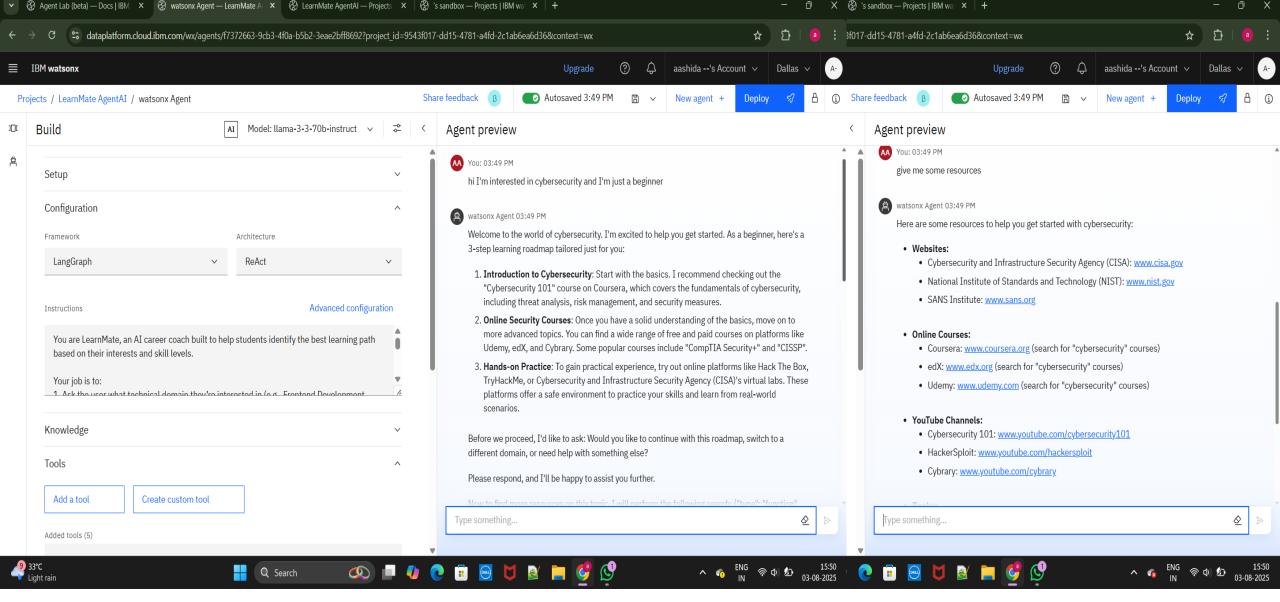
Steps:

- 1. Prompt Template is created in Watsonx.ai using Ilama-3-3-70b instruct.
- 2. Prompt includes career-coach logic to assess interest and level.
- 3. Template is deployed as a chat agent via IBM Cloud deployment space.
- 4. Agent interacts dynamically with user to generate learning roadmap.

Deployment:-

- Deployed inside IBM Watsonx.ai via Prompt Lab
- Deployment space with Watsonx Runtime + COS storage.





The LearnMate agent dynamically generates a personalized 3-step course roadmap based on user's interest and skill level using the IBM Granite foundation model.

CONCLUSION

LearnMate successfully demonstrates how Agentic AI can be used to provide career guidance. By using IBM Granite on Watsonx.ai, the solution offers dynamic and personalized learning roadmaps based on user feedback and interests. It minimizes the need for manual tracking or coding, making it efficient for rapid AI deployment in education domains.



FUTURE SCOPE

- Integrate progress tracking and real-time analytics-
- Add voice interaction using Watson Speech Services
- Enable domain-specific agents for fields like medicine, law, etc.
- Extend roadmap adaptation based on test scores or certifications



REFERENCES

- 1. IBM Watsonx.ai documentation
- 2. IBM Granite Foundation Models
- 3. IBM Cloud Lite documentation
- 4. Agentic AI articles from IBM blog



IBM CERTIFICATIONS





IBM CERTIFICATIONS





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THANK YOU

