CAPSTONE PROJECT

AI CAREER COUNSELOR RURAL YOUTH

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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

Rural youth continue to face a serious lack of access to structured career guidance due to limited exposure, lack of professional counsellors, and poor awareness of relevant skill development opportunities. Most students are unaware of job-oriented courses, government schemes, or online training platforms that can align their careers with their interests. Traditional, manual career counselling methods fail to scale and reach underserved communities, leading to skill mismatch, underemployment, and reduced career potential.

There is an urgent need for a smart, localized, and accessible cloud-driven solution that offers personalized, real-time career guidance for rural youth.



PROPOSED SOLUTION

- A cloud-native AI system, deployed on IBM Cloud, to provide individually tailored career counseling to rural youth based on their age, interests, and qualifications.
- Datasets covering government schemes, skill training platforms, and employment opportunities are securely stored in IBM Cloud databases.
- The Al uses IBM Granite and Watson NLP to analyse user queries, recommend career paths, and answer questions in natural language.
- The experience is delivered via a web or mobile app (hosted on IBM Cloud), accessible in multiple local languages, with a simple user interface.
- Real-time feedback from users is collected and analysed—enabling continuous improvement.
- Personalized guidance based on age, interests, education, and local job market trends.
- Inform about job-oriented courses, government schemes, and online learning resources.



SYSTEM APPROACH

The "System Approach" section outlines the overall strategy and methodology for developing and implementing the rental bike prediction system. Here's a suggested structure for this section:

System requirements:

- IBM Cloud(mandatory)
- IBM Watson Assistant, IBM Granite
- IBM Cloud object storage for dataset handling

Technologies Used:

- Al Language Model (LLM) like Llama-3 or WatsonX
- LangGraph + ReAct



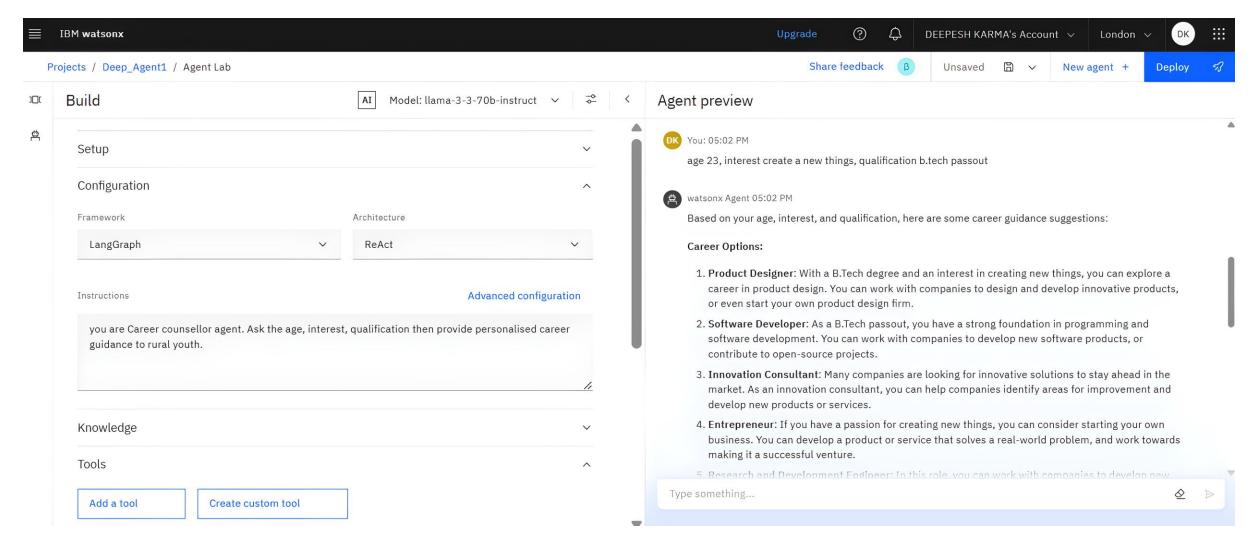
ALGORITHM & DEPLOYMENT

- Algorithm Selection:
 - Natural Language Understanding to analyse input (age, interest, qualification)
- Data Input:
 - Student profile (age, qualification, interest, location)
 - Real-time data: government schemes, local job demand, course info.
- Training Process:
 - Finetune LLM or use prompt engineering for guiding rural career topics
 - Models trained on Q&A career data and guidance scenarios, using IBM.
- Prediction/Recommendation:

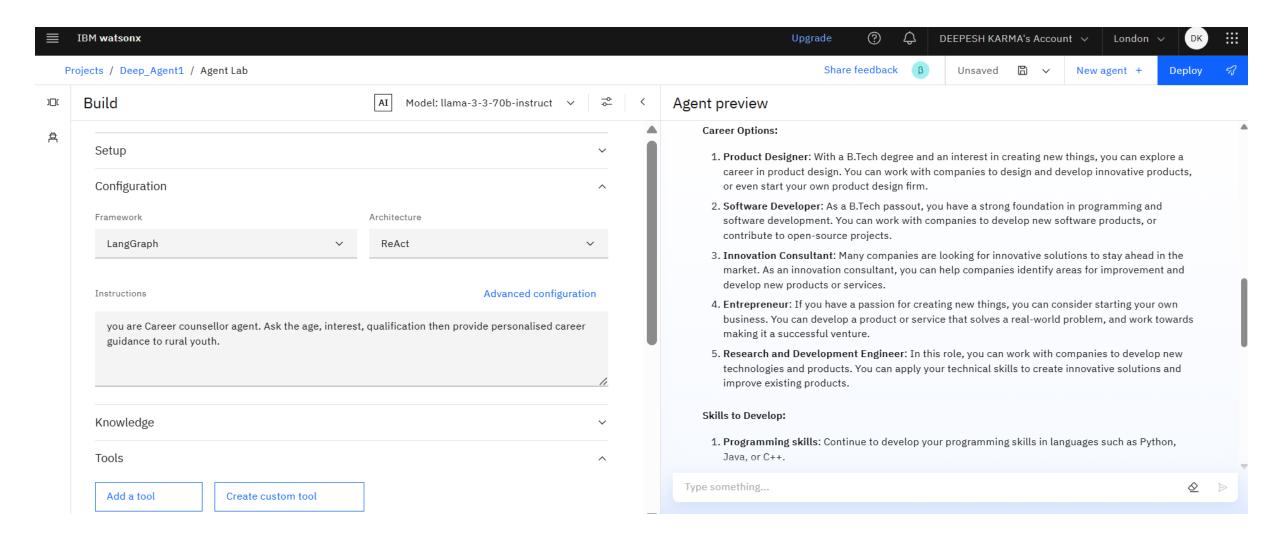
Real-time suggestions delivered through the AI using the IBM Cloud Deployed application.

- Deployment:
 - Cloud-based deployment for scalability
 - All operations and scaling controlled from the IBM Cloud dashboard.
 - APIs configured with IBM

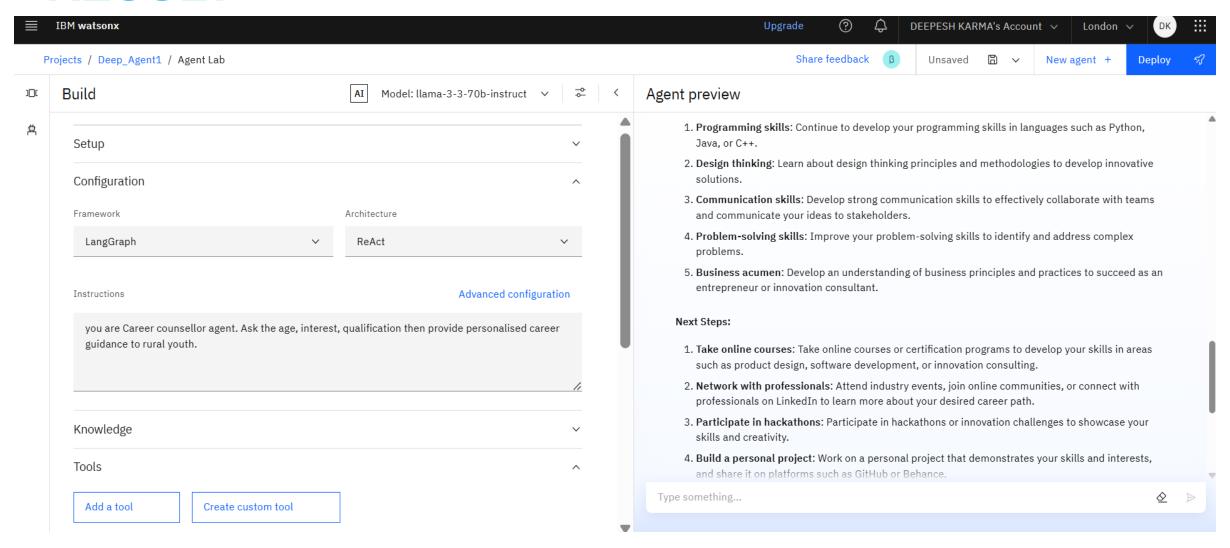




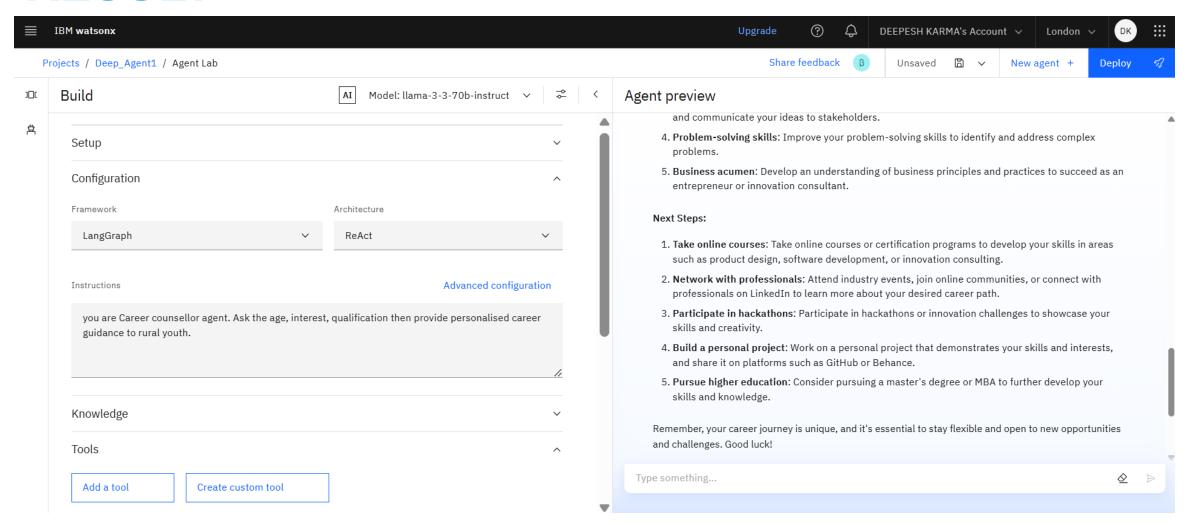














CONCLUSION

- The Al Career Counsellor enables rural youth to make informed career choices.
- Provides scalable, localized, and always-available guidance.
- Bridges the information and counselling gap versus traditional methods.
- The result: Accessible, personalized, and up-to-date career support for underserved communities.



FUTURE SCOPE

- Integrate voice support (for low literacy users)
- Expand to include mental health and entrepreneurship guidance
- Connect with local mentors/volunteers
- Roll out support for more local languages and rural regions across India.
- Integrate live government and NGO data feeds for real-time scheme/job updates.
- Extend system reach using mobile SMS and IVR modules (IBM Cloud Communications APIs).
- Incorporate advanced analytics and reporting for impact measurement.



REFERENCES

- Research on Career Guidance Gaps in India
- Al in Education Review Papers
- Government Skill Development Schemes
- IBM WatsonX LangGraph Documentation
- Official IBM documentation: Granite, Watsonx, Cloud object storage.
- Academic research on Al-driven career guidance and rural education.
- Government skills portals and job matching services.



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Learning hours: 20 mins



THANK YOU

