
CAPSTONE PROJECT

AI CAREER COUNSELOR

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OUTLINE

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PROBLEM STATEMENT

Rural youth lack access to structured career guidance due to limited exposure and absence of professional counselors. Awareness of job-oriented courses, government schemes and online training is very low. This leads to skill mismatch, under employment and missed career opportunities. Traditional counseling methods are not scalable or accessible to underserved communities. There is an urgent need for a smart, localized solution that delivers personalized career guidance in real time.

Proposed Solution:

We propose a web-based AI Career Counselor platform that provides rural youth with accessible and personalized career guidance. By collecting simple details such as education level, interests and goals, the system recommends relevant courses, government schemes, scholarships and training resources. Designed as a lightweight, user-friendly solution, it works even in low-bandwidth environments, ensuring inclusivity. This platform empowers underserved communities with real-time, localized and reliable guidance, bridging the gap between education and employment opportunities.

TECHNOLOGY USED

IBM Cloud Lite Services -> Hosting and Deployment

IBM Granite model -> (Watsonx.ai) - for NLP-based recommendations

IBM Cloud Object Storage -> Store structured data about schemes, courses and resources

IBM Cloud Agent Lab -> Used to build, deploy and test AI-driven applications

IBM CLOUD SERVICES USED

- IBM Cloud Watsonx AI Studio
- IBM Cloud Watsonx AI Runtime
- IBM Cloud Agent Lab
- IBM Granite foundation model
- IBM Cloud Object Storage

WOW FACTORS

This solution will provide rural youth with structured career guidance, increase awareness of opportunities, reduce skill mismatch, and empower them to align their education with employable skills by making information more accessible and actionable.

Unique features:

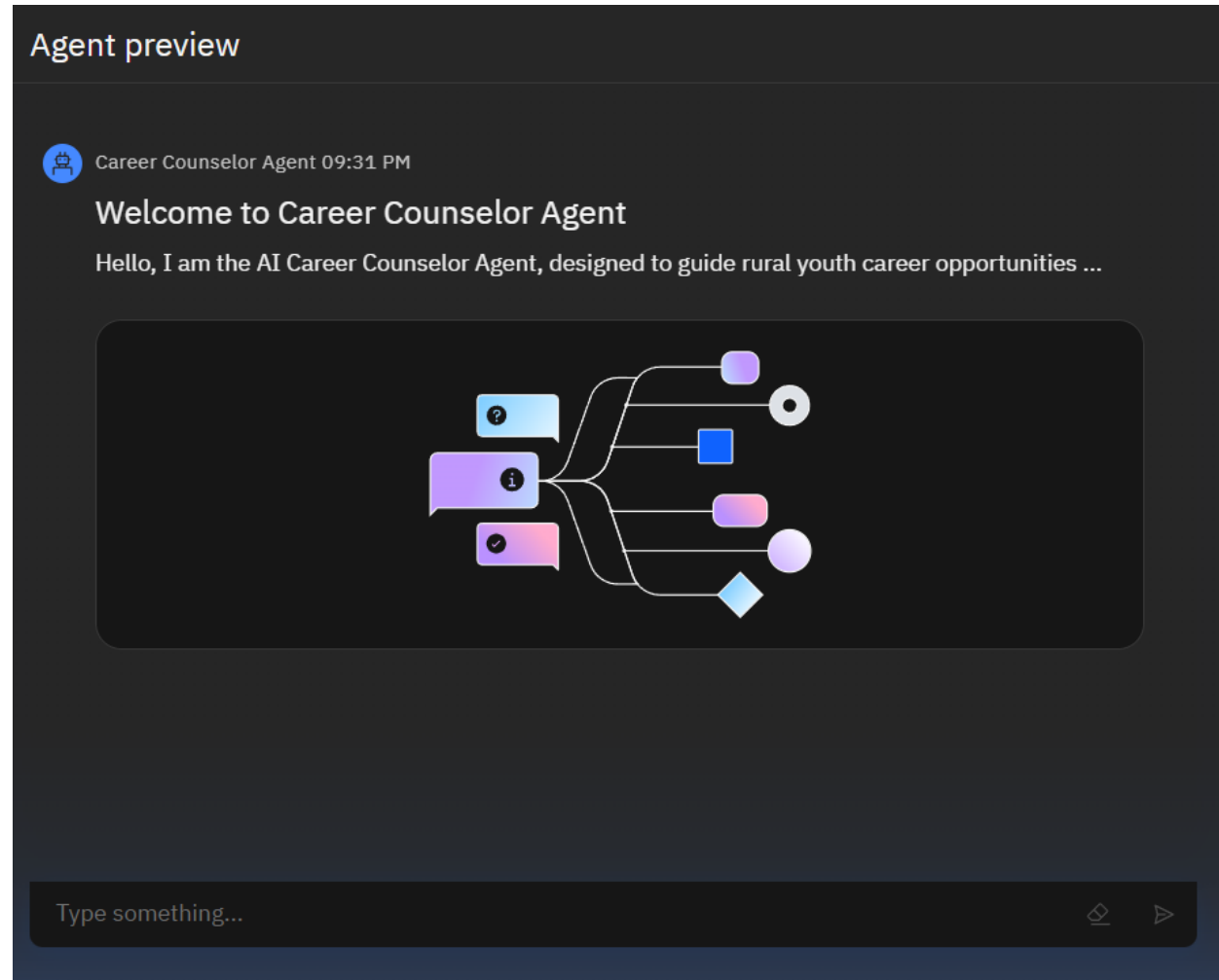
- Localized career suggestions tailored to education, interests, and goals
- Recommendations on government schemes, scholarships, and training programs
- Access to curated job-oriented courses and online platforms
- Real-time updates on emerging career opportunities and skill demands
- Lightweight, web-based platform designed for low-bandwidth rural areas
- Personalized career roadmaps with actionable next steps

END USERS

- Rural students (secondary/higher secondary, graduates)
- Fresh job seekers in villages/semi-urban areas
- NGOs
- Rural schools providing career awareness

RESULTS


- **Improved Awareness** – Rural youth gain knowledge of available career paths, courses, and job markets that were previously unknown.
- **Access to Trusted Information** – Students receive verified, real-time guidance instead of relying on unstructured or unreliable sources.
- **Personalized Career Pathways** – Recommendations are tailored to individual interests, skills, and education levels.




RESULTS

- **Bridging the Gap** – Reduces the skill mismatch between what students learn and what industries demand.
- **Scalability** – A digital platform can reach thousands of students across rural regions without requiring physical counselors.
- **Employment Opportunities** – Increases chances of job placement, entrepreneurship, or skill-based work.

Agent preview

 You: 09:36 PM

Suggest skill-based courses for rural youth after graduation

 Career Counselor Agent 09:36 PM

Based on the search results, here are some skill-based courses for rural youth after graduation:


1. Building youth leadership skills and community awareness
2. Skill acquisition based on reports from 47 youth attending after-school programs
3. Green skills training for rural youth in South East Asia
4. Operational modalities for skill training of rural youth (STRY)
5. Employment outcomes from youth skills-based training interventions
6. Growing livelihoods for India's rural youth through skill-based training
7. Practical, need-based skills training programs for rural youth
8. Skill training programs for unemployed rural youth under DDU-GKY programme
9. Skill-based training for rural youth on agri-based vocational courses in agriculture & allied areas
10. Educational and skills training programs for young people in school settings

These courses are designed to equip rural youth with the skills and knowledge needed to succeed


RESULTS

- **Inclusion & Equity** – Ensures underserved and rural communities have the same career guidance as urban counterparts.
- **Empowerment of Youth** – Builds confidence by giving clear career direction and actionable next steps.
- **Long-Term Impact** – Contributes to reducing underemployment and poverty while nurturing a skilled workforce for the future.

Agent preview

 You: 09:33 PM

Give career options for a student with 12th pass in science

 Career Counselor Agent 09:33 PM

Based on the search results, here are some career options for a student with 12th pass in science:

1. Medicine and Surgery
2. Biotech
3. Nursing
4. Lab technicians
5. Forensic
6. Pharmacy
7. Physiotherapy
8. Marine biology
9. Agriculture science
10. Veterinary science
11. Research and Development
12. Clinical Laboratory Scientist
13. Public Health

RESULTS

Deployed AI Agent

The screenshot displays the IBM watsonx interface for a deployed AI agent. The top navigation bar includes the IBM watsonx logo, an 'Upgrade' button, a help icon, a notification bell, and user account information for 'Mukunda Jha's Account' in 'Dallas'. The breadcrumb trail shows the path: 'Deployment spaces / AI_Career_Counselor / Career Counselor Agent /'. The main header for the agent is 'Career Counselor Agent', which is marked as 'Deployed' and 'Online'. Below this, there are tabs for 'API reference', 'Test', and 'Preview', with the 'Preview' tab currently selected. A 'New chat +' button is located on the right side of the chat area. The chat history shows a user message at 09:40 PM asking to 'List government schemes for job seekers in villages.' The agent's response, also at 09:40 PM, provides a list of four government schemes:

- 1. Employment Generation Schemes/ Programmes of Government of India - This scheme aims to generate employment opportunities in rural areas by creating public infrastructure and livelihood assets.
- 2. Wheels 2 Work - This scheme enables job seekers living in rural areas without public transport to travel to work.
- 3. Prime Minister Employment Generation Programme (PMEGP) - This scheme is implemented by Khadi and Village Industries Commission (KVIC) to generate employment opportunities in rural areas.
- 4. MGNREGS (Mahatma Gandhi National Rural Employment Guarantee Scheme) - This scheme provides a guarantee of 100 days of employment in a year to rural households.

At the bottom of the chat area, there is a text input field with the placeholder 'type something...' and a send button.

CONCLUSION

- Rural youth face systemic barriers in career guidance, leading to limited awareness of opportunities and poor alignment between skills and employment.
- Traditional career counseling methods are not scalable or accessible for underserved communities, causing underemployment and wasted potential.
- A smart, localized, and accessible digital solution is essential to bridge this gap, ensuring rural youth receive personalized, real-time career guidance to improve employability and future growth.

FUTURE SCOPE

- Multilingual Expansion
- Mobile App Integration
- AI-Based Aptitude Tests
- Partnerships with Govt/NGOs
- Job Matching Engine
- Gamified Learning Paths

IBM CERTIFICATIONS

In recognition of the commitment to achieve
professional excellence



Mukunda Jha

Has successfully satisfied the requirements for:

Getting Started with Artificial Intelligence



Issued on: Jul 21, 2025

Issued by: IBM SkillsBuild

Verify: <https://www.credly.com/badges/c868aa8f-63a2-4ec1-8091-2f5304d40c28>



IBM **SkillsBuild**

Completion Certificate



This certificate is presented to

Mukunda Jha

for the completion of

**Lab: Retrieval Augmented Generation with
LangChain**

(ALM-COURSE_3824998)

According to the Adobe Learning Manager system of record

GITHUB LINK

GitHub Link : https://github.com/mj19-git/AI_Career_Counselor

GITHUB LINK

- Readme file - https://github.com/mj19-git/AI_Career_Counselor/blob/main/README.md



THANK YOU