
CAPSTONE PROJECT

AGENTIC CAREER COUNSELING COMPANION

An AI-powered Career Development Agent

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CSE(Artificial Intelligence and Machine Learning)

OUTLINE

- **Problem Statement**
- **Technology Used**
- **Wow Factor**
- **End Users**
- **Result**
- **Conclusion**
- **GitHub Link**
- **Future Scope**
- **IBM Certifications**

!PROBLEM STATEMENT

In today's fast-paced, tech-driven world, students and job seekers are overwhelmed by the rapidly shifting career landscape. From emerging roles powered by AI and data science to industry-specific skill demands, it has become increasingly difficult to navigate career decisions with confidence. Traditional career counseling methods are manual, one-size-fits-all, and fail to scale — leaving millions without timely or personalized support. This creates a massive gap in career readiness, skill alignment, and job-market awareness.

Proposed Solution

Introducing the Agentic Career Counseling Companion — an intelligent, AI-powered career co-pilot built using IBM Watsonx.ai and Granite LLMs. This next-gen solution blends the power of natural language processing, real-time resume analytics, and context-aware recommendations to transform how users plan their careers.

Key Capabilities:

This AI agent redefines career mentoring with hyper-personalization, 24/7 availability, and scalable intelligence — empowering users not just to survive the job market, but to lead it.

⚙️ TECHNOLOGY USED

IBM Watsonx.ai Studio

IBM Cloud Code Engine

FastAPI for backend

Streamlit for frontend UI

Granite-3-2B-Instruct LLM

Prompt App on Watsonx.ai

GitHub for version control

💡 IBM CLOUD SERVICES USED

- IBM Watsonx AI Studio
- IBM Cloud Object Storage
- IBM Cloud Code Engine (for backend deployment)
- Watsonx Prompt App (for live demo)
- IBM Granite foundation models

★ WOW FACTORS

Personalized AI Career Advisor for students and professionals

Real-time resume analysis and job matching

Suggests career paths, skill gaps, and learning content

Accessible via web (Streamlit UI + FastAPI backend)

Deployable Prompt App version for instant access

Can operate in bilingual (English + Telugu) formats

Voice input and real-time suggestion roadmap planned



END USERS

- College Students
- Job Seekers
- Career Coaches
- Educational Institutions
- Internship/Placement Cells

RESULTS

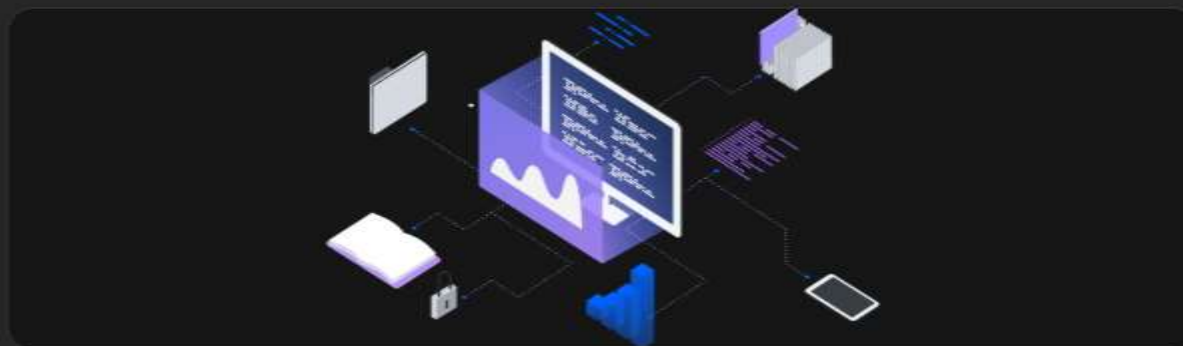
Build > Agent preview



Agentic Career Counseling AI 07:37 PM

Welcome to Agentic Career Counseling AI

Personalized career path suggestions using Granite model based on your skills and interests.

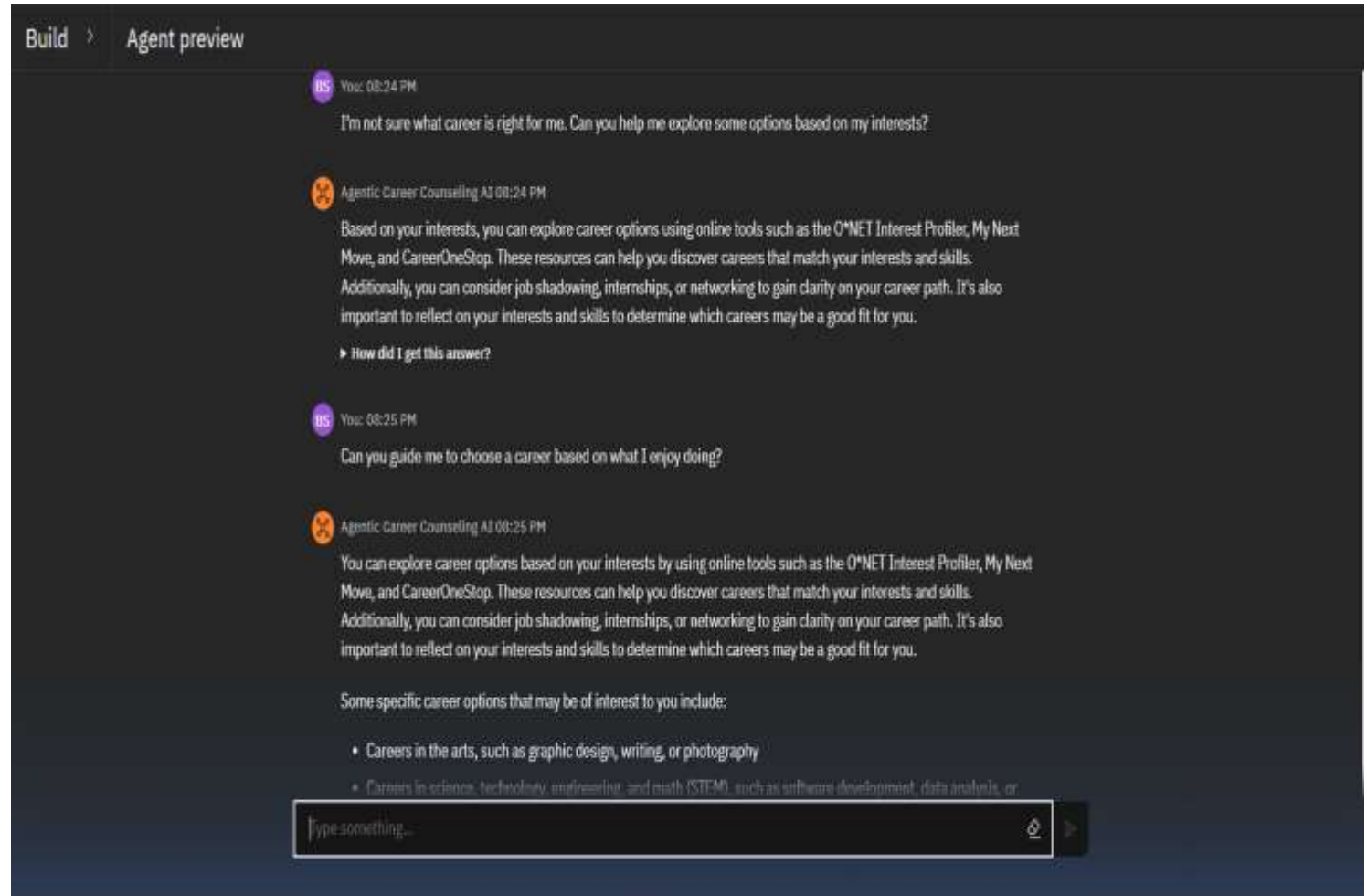


Type something...



RESULTS

- ❑ AI Agent successfully deployed as Prompt App
- ❑ Supports career Q&A, resume feedback, and guidance
- ❑ Integrated with IBM Granite models for contextual responses
- ❑ Accessible both via FastAPI + Streamlit UI and Prompt App



RESULTS

AI Agent Deployed as Prompt App
Fully integrated into IBM Watsonx Prompt Lab for intelligent career interactions.

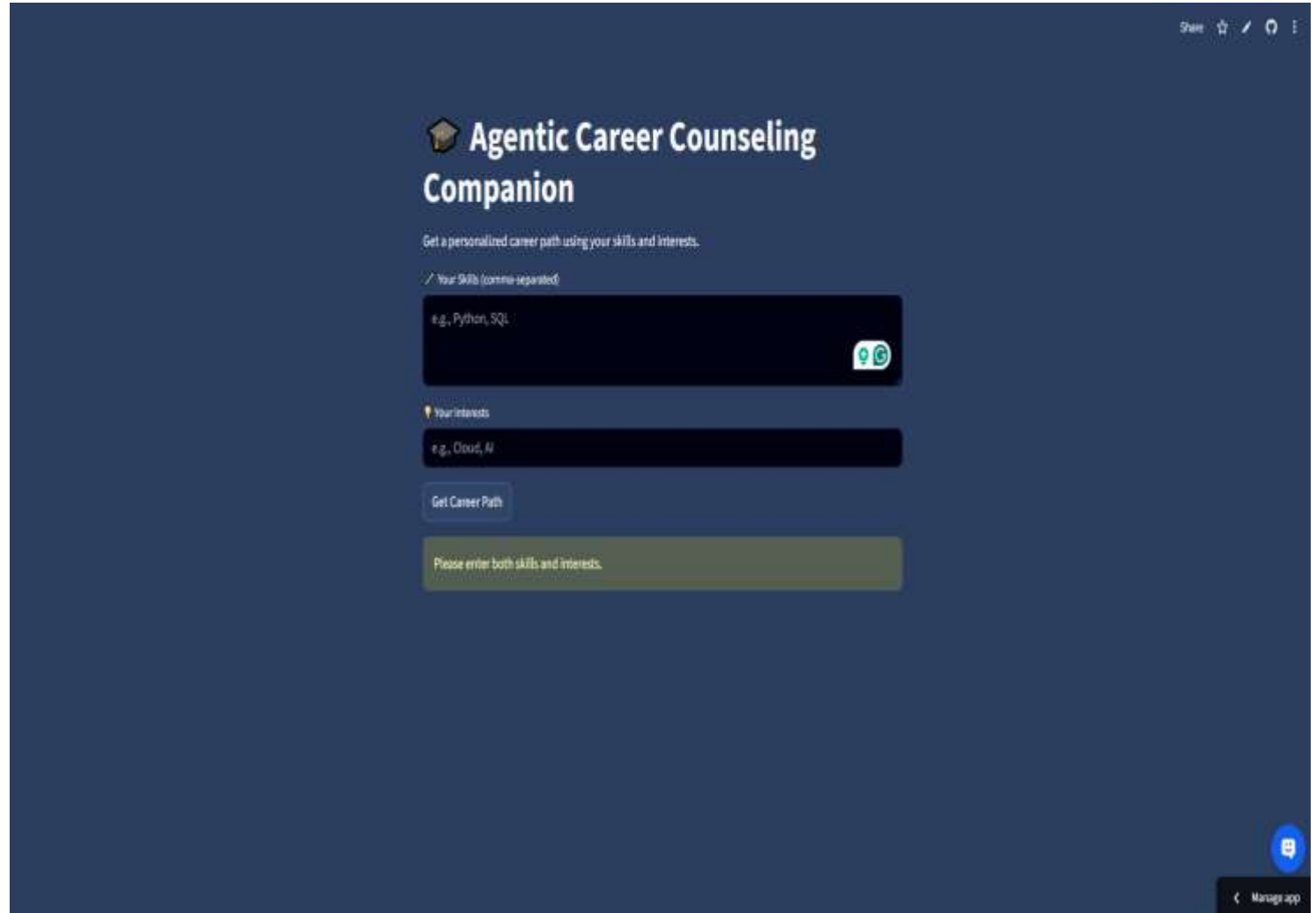
Supports Career Q&A, Resume Feedback & Guidance

Provides real-time personalized advice using user inputs.

Powered by IBM Granite LLMs
Ensures context-aware, accurate, and scalable responses.

Dual Access via FastAPI + Streamlit UI
Available as both a web app and Prompt App for flexible user access.

Deployed AI Agent



The screenshot displays a web application titled "Agentic Career Counseling Companion" on a dark blue background. The interface includes a header with a house icon and the title. Below the title, a subtitle reads "Get a personalized career path using your skills and interests." There are two input fields: "Your Skills (comma-separated)" with a placeholder "e.g., Python, SQL" and a green circular icon with a white 'G' to its right; and "Your Interests" with a placeholder "e.g., Cloud, AI". A "Get Career Path" button is positioned below the interests field. A green error message box at the bottom states "Please enter both skills and interests." The top right corner features icons for "Share", a star, a pencil, and a magnifying glass. The bottom right corner has a blue circular chat icon and a "Manage app" button.

✓ CONCLUSION

- This AI-powered Career Agent revolutionizes decision-making by delivering personalized, real-time guidance—empowering users to explore the right career paths, identify skill gaps, and upskill with confidence.
- It reduces reliance on traditional counseling, closes the career guidance gap in education, and helps users make smarter, faster, and future-ready choices.

FUTURE SCOPE

- Voice-enabled AI career counseling
- LinkedIn & GitHub profile analysis
- Real-time job scraping and recommendation
- Integration with learning platforms (e.g., Coursera, IBM SkillsBuild)
- Predictive career path generation with skill mapping
- PDF/ZIP download of career reports



IBM CERTIFICATIONS

In recognition of the commitment to achieve
professional excellence



Boyina Sankar

Has successfully satisfied the requirements for:

Getting Started with Artificial Intelligence



Issued on: Jul 18, 2025
Issued by: IBM SkillsBuild

Verify: <https://www.credly.com/badges/b8f7f8f4-4bb8-4f4c-af05-b86d88dd6c57>



IBM **SkillsBuild**

Completion Certificate



This certificate is presented to

BOYINA SANKAR

for the completion of

**Lab: Retrieval Augmented Generation with
LangChain**

(ALM-COURSE_3824998)

According to the Adobe Learning Manager system of record

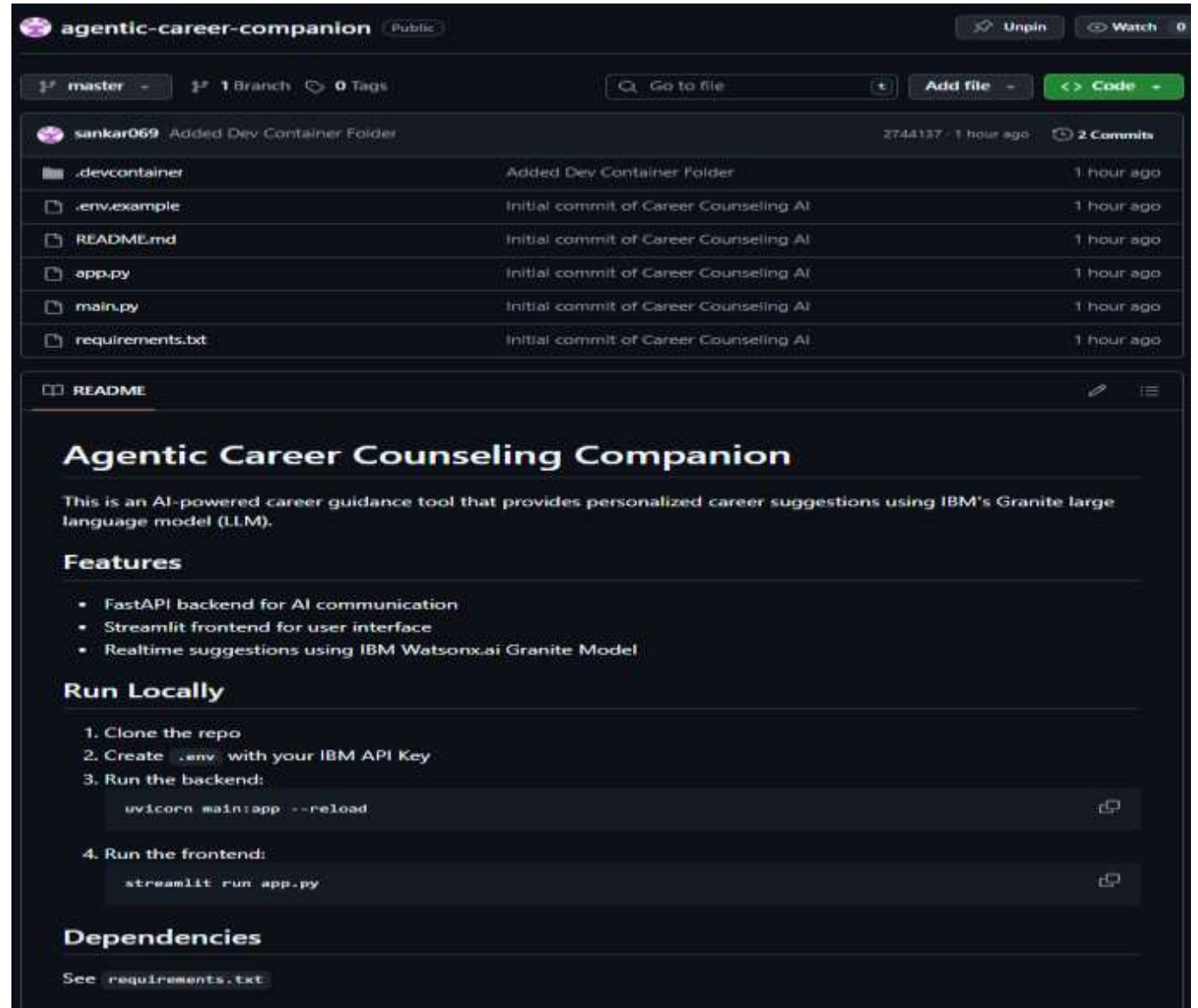
Completion date: 24 Jul 2025 (GMT)

Learning hours: 20 mins

GITHUB LINK

REPO LINK:

[agent-career-companion](https://github.com/sankar069/agent-career-companion)



The screenshot shows the GitHub repository page for 'agent-career-companion' by user 'sankar069'. The repository is public and has 1 branch and 0 tags. The commit history shows a recent commit by 'sankar069' titled 'Added Dev Container Folder' at 2744137, 1 hour ago, with 2 commits. The file list includes .devcontainer, .env.example, README.md, app.py, main.py, and requirements.txt, all with initial commits of 'Career Counseling AI' 1 hour ago. The README file is selected, showing the title 'Agentic Career Counseling Companion'. The description states it is an AI-powered career guidance tool using IBM's Granite large language model (LLM). The 'Features' section lists: FastAPI backend for AI communication, Streamlit frontend for user interface, and Realtime suggestions using IBM Watsonx.ai Granite Model. The 'Run Locally' section provides a 3-step guide: 1. Clone the repo, 2. Create .env with your IBM API Key, and 3. Run the backend: `uvicorn main:app --reload`. The 4th step is 'Run the frontend:' with the command `streamlit run app.py`. The 'Dependencies' section refers to requirements.txt.

agent-career-companion Public

Unpin Watch 0

master 1 Branch 0 Tags

Go to file Add file Code

sankar069 Added Dev Container Folder 2744137 · 1 hour ago 2 Commits

.devcontainer	Added Dev Container Folder	1 hour ago
.env.example	Initial commit of Career Counseling AI	1 hour ago
README.md	Initial commit of Career Counseling AI	1 hour ago
app.py	Initial commit of Career Counseling AI	1 hour ago
main.py	Initial commit of Career Counseling AI	1 hour ago
requirements.txt	Initial commit of Career Counseling AI	1 hour ago

README

Agentic Career Counseling Companion

This is an AI-powered career guidance tool that provides personalized career suggestions using IBM's Granite large language model (LLM).

Features

- FastAPI backend for AI communication
- Streamlit frontend for user interface
- Realtime suggestions using IBM Watsonx.ai Granite Model

Run Locally

- Clone the repo
- Create `.env` with your IBM API Key
- Run the backend:

```
uvicorn main:app --reload
```
- Run the frontend:

```
streamlit run app.py
```

Dependencies

See `requirements.txt`



THANK YOU