
IBM AICTE PROJECT

CAREER COMPANION

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**College Name & Department : Priyadarshini College Of
Engineering (2025 passed Out) - Electronics and
Telecommunications**

OUTLINE

- Problem Statement
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PROBLEM STATEMENT

Students often face difficulty making informed career decisions due to fragmented access to guidance, limited awareness of personal strengths, and rapidly evolving job markets. Traditional counseling systems lack personalization, scalability, and real-time adaptability — leading to mismatches in career paths, underutilized potential, and future regret.

Proposed Solution:

The Career Companion will use Natural Language Processing (NLP) to address the lack of personalized and scalable career guidance that autonomously supports students in making informed, future-ready career decisions with much ease.

TECHNOLOGY USED

- IBM cloud lite services
- Natural Language Processing (NLP)
- Retrieval Augmented Generation (RAG)
- IBM Granite model

IBM CLOUD SERVICES USED

- IBM Cloud Watsonx AI Studio
- IBM Cloud Watsonx AI runtime
- IBM Cloud Agent Lab
- IBM Granite foundation model

WOW FACTORS

The AI-powered career counseling agent stands out by delivering real-time, personalized guidance tailored to each student's strengths, interests, and academic data.

Unique Features :

- Offers multiple tailored career paths like “Safe”, “High-Growth”, and “Bold” options.
- Shows 3–5 year career projections including roles, effort level, skills, and ROI.
- Ensures fair, supportive suggestions regardless of background or career choice.

END USERS

- College/University Students
- Educational Institutions and Universities
- Teachers and Mentors
- EdTech Platforms

RESULTS

Agent preview



Career Companion 02:22 AM

Welcome to Career Companion

This assistant will act as an autonomous mentor, helping students navigate complex career paths



Sample questions

Type something...



RESULTS

- Tracks changes in performance and adjusts recommendations in real time—no manual intervention needed.
- Supports traditional, emerging, and unconventional careers with structured advice and inspiration.
- Providing solutions based on carrier related queries making it popular among young masses.

Agent preview



You: 02:31 AM

What are the best carrier options for me after my 12th grade?



Career Companion 02:31 AM

Hi there! To give you the best advice, I need a bit more information about your interests and strengths. However, I can provide a general overview of popular career paths typically considered after 12th grade. Here are three potential options:

1. **STEM Fields (Science, Technology, Engineering, and Mathematics):** These fields are often in high demand due to technological advancements. Options include Computer Science, Engineering (Mechanical, Electrical, Civil, etc.), Biology, Chemistry, Physics, and Mathematics.
2. **Business and Management:** If you're interested in entrepreneurship, management, or finance, you might consider Business Administration, Accounting, or Marketing.
3. **Healthcare:** With an aging population, healthcare professionals are always in demand. You could explore Nursing, Pharmacy, Medical Laboratory Technology, or Public Health.

|Type something...



RESULTS

- Encourages strengths, suggests alternative routes when needed, and reduces confusion through supportive guidance.
- Using AI-driven insights, it offers scenario-based recommendations, highlights industry-aligned skills, and provides actionable learning goals.

Agent preview



You: 02:36 AM

Which career paths offer high growth and salary potential?



Career Companion 02:36 AM

To provide you with the most accurate information, I'll need to look into current job market trends. Here's what I found using recent data from various sources:

1. **Data Science and Analytics:** With the exponential growth of data, professionals skilled in data analysis, machine learning, and AI are in high demand. The median salary for data scientists in the U.S. is around \$113,000, according to the Bureau of Labor Statistics.
2. **Cybersecurity:** As businesses increasingly rely on digital platforms, the need for cybersecurity experts to protect sensitive information grows. The average salary for information security analysts is approximately \$103,590 per year in the U.S., as reported by the BLS.
3. **Healthcare Professionals:** Roles such as physician assistants, nurse practitioners, and physical therapists are projected to see significant growth due to an aging population and advancements in medical technology. Salaries vary widely but can

Type something...



RESULTS

Deployed Career Companion AI Agent

The screenshot displays the IBM Watsonx user interface. At the top, the header includes the IBM Watsonx logo, an 'Upgrade' button, and user account information for 'Sarthak Nikose's Account' in 'Dallas'. The breadcrumb trail indicates the location: 'Deployment spaces / Career Companion / Career Companion /'. The main section shows the 'Career Companion' agent with a green checkmark indicating it is 'Deployed' and 'Online'. Below this, there are tabs for 'API reference', 'Test', and 'Preview', with the 'Preview' tab currently selected. The chat preview shows a conversation where the user states, 'I have chosen PCM in my 12th grade'. The AI agent responds with a friendly greeting and provides a brief overview of career opportunities, listing 'Engineering' and 'Data Science' as key fields.

IBM watsonx Upgrade ? Sarthak Nikose's Account Dallas SN

Deployment spaces / Career Companion / Career Companion /

Career Companion ✓ Deployed Online

API reference Test **Preview**

New chat +

S You 03:01 AM
I have chosen PCM in my 12th grade

Career Companion 03:01 AM
Hi there! That's a great starting point. With a PCM (Physics, Chemistry, and Mathematics) background in your 12th grade, you're well-positioned for several high-demand fields. Here's a brief overview:

1. **Engineering:** Fields like Mechanical, Civil, Electrical, and Computer Science Engineering are always in demand. Your PCM foundation is excellent for these.
2. **Data Science:** With Mathematics as a strong suit, you can explore Data Science or related fields like Data Analytics

Type something...

CONCLUSION

- The Career Companion AI revolutionizes traditional career counseling by offering personalized, adaptive, and data-driven guidance.
- It empowers students to make informed, confident decisions aligned with their strengths, goals, and market trends.
- This agent is not just a tool — it's a smart companion for every learner's journey to success.

GITHUB LINK

- Github Link: <https://github.com/Sarthaknikose/Carrier-Companion>

FUTURE SCOPE

- Integration with Real-Time Job Market APIs
- Enhanced Personalization with Emotional AI
- Predictive Success Modeling
- Collaboration with Industry Mentors & Recruiters
- Integration with Learning Platforms

IBM CERTIFICATIONS



IBM **SkillsBuild**

Completion Certificate



This certificate is presented to

Sarthak Nikose

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



THANK YOU