

AI-powered Career Coach Assistant

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Project Overview

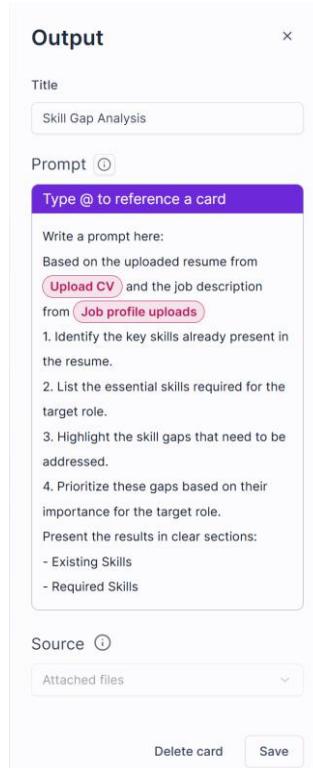
This project demonstrates the development of a generative AI-powered Q App using **Amazon Q Business**. The application analyzes uploaded CVs and job profiles to identify skill gaps and recommend personalized training paths. It integrates advanced interaction components, secure access controls, and dynamic data sources including Amazon S3 and static PDFs.

Core Functionality

- **Skill Gap Analysis:** Input cards for CV and job profile uploads; output card displays skill gap results.

The image shows three separate input cards side-by-side, each with a close button (X) in the top right corner.

- File upload (Left):** Title: "Upload CV". Default file: "sample-cv-01.docx". Notes: "Uploaded files will be accessible to users of published Q Apps". Checkboxes: "Allow override of default file" (checked). Buttons: "Delete card" and "Save".
- File upload (Middle):** Title: "Job profile uploads". Default file: "sample-job-...". Notes: "Uploaded files will be accessible to users of published Q Apps". Checkboxes: "Allow override of default file" (checked). Buttons: "Delete card" and "Save".
- Text input (Right):** Title: "Career Coach Input". Placeholder: "placeholder". Default value: "Tech field — specifically Data Science. The learner has strong Python skills but limited experience with machine learning". Buttons: "Delete card" and "Save".



- **Training Recommendations:** Output card suggests relevant training based on identified gaps.

CareerCoachAssistant

AI-powered assistant to automate resume review, skill gap analysis, and personalized training recommendations for learners at Career4All.

Career Coach Input
Text input
Tech field — specifically Data Science.
The learner has strong Python skills but limited experience with machine learning frameworks and cloud tools.
Recommend focusing on practical, project-based learning in ML and cloud deployment.
Include short courses or certifications (Coursera, Udemy, etc.)

Job profile uploads
File
sample-job-description-01.docx

Upload CV
File
sample-cv-01.docx

Skill Gap Analysis
Output
Choose "Run" to run the app

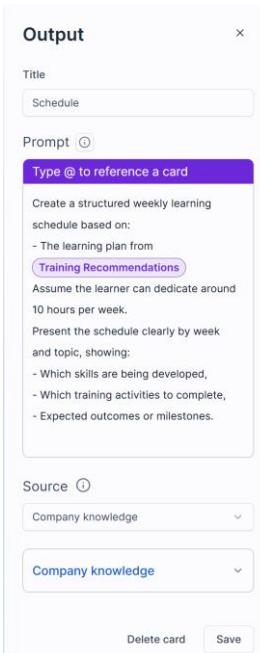
Schedule
Output
Generating text as soon as Training Recommendations is filled

Training Recommendations
Output
Generating text as soon as Skill Gap Analysis is filled

Run

Advanced Interaction Components

- **Suggested Schedule Output Card:** Displays a personalized training timeline.



- **Coach Recommendation Input Card:** Allows users to request tailored advice from specific coaches.

Output

Title: Training Recommendations

Prompt:

Type @ to reference a card

Using the skill gaps identified in [Skill Gap Analysis](#), provide personalized training recommendations.

1. Suggest specific courses, certifications, or learning paths to address each gap.
2. Include both free and paid resources.
3. Prioritize recommendations based on impact and time required.
4. Provide a suggested timeline for completing these training activities.
5. Include any relevant Career4All or internal programs.

Return the output as a clear, actionable training plan.

Source:

Company knowledge

Delete card Save

- **Functionality Verified:** Screenshots of both components working correctly.

CareerCoachAssistant

AI-powered assistant to automate resume review, skill gap analysis, and personalized training recommendations for learners at Career4All.

Add card Share

Career Coach Input

Tech field — specifically Data Science. The learner has strong Python skills but limited experience with machine learning frameworks and cloud tools. Recommend focusing on practical, project-based learning in ML and cloud deployment. Include short courses or certifications (Coursera, Google Cloud, etc.)

Job profile uploads

sample-job-description-01.docx

Upload CV

sample-cv-01.docx

Skill Gap Analysis

Skills Analysis: John Doe's Resume vs. Cloud Solutions Architect - Generative AI Role

Existing Skills

Based on John Doe's resume, the following key skills are present:

- Cloud Computing (AWS Certified)
- AWS Certified Cloud Practitioner certification

Output

Schedule

Training Recommendations

Weekly Learning Schedule for Cloud Solutions Architect - Generative AI Role

Months 1-3: AI Fundamentals & Python

Week 1-4: Introduction to AI

Skills: AI fundamentals, problem-solving techniques, and knowledge representation

Run **Reset**

Personalized Training Plan for Cloud Solutions Architect - Generative AI Role

AI/ML Fundamentals (Priority 1)

1. Artificial Intelligence Course
- Focus on AI fundamentals, problem-solving techniques, and knowledge representation
- Learn about search algorithms, game

Data Source Integration

- **Static PDF Upload:** Course catalog uploaded and synced.
- **Amazon S3 Integration:** Training catalog file uploaded and synced.
- **Screenshots:** Confirm successful sync for both sources.

The screenshot shows the AWS Q Business Data Sources interface. At the top, the navigation path is: Amazon Q Business > Applications > CareerCoachAssistant > Data sources > CareerCoach_DataSource. The main page displays the 'CareerCoach_DataSource' details, including its name, status (Active), type (S3V2), and last sync status (Successful). Below this, the 'Sync history' section shows two completed sync jobs on November 2nd and 1st, 2025, with 7 and 5 items scanned respectively, both marked as successful. At the bottom, there are links for CloudShell, Feedback, and cookie preferences.

Automatic Updates

- **Scheduled Sync:** Daily sync configured for S3 data source.

The screenshot shows the AWS Q Business Data Sources interface. At the top, the navigation path is: Amazon Q Business > Applications > CareerCoachAssistant > Data sources > CareerCoach_DataSource. The main page displays the 'CareerCoach_DataSource' details, including its name, status (Active), type (S3V2), and last sync status (Successful). Below this, the 'Sync history' section shows two completed sync jobs on November 2nd and 1st, 2025, with 7 and 5 items scanned respectively, both marked as successful. At the bottom, there are links for CloudShell, Feedback, and cookie preferences.

Security and Moderation

The screenshot shows the Amazon Q Business interface under the 'Data sources' section for the 'CareerCoachAssistant' application. A green success message at the top states: 'You successfully synced the following data source: 'CareerCoach_DataSource' at start time Nov 01, 2025, 5:57 AM GMT+3.' Below this, a table provides details about the index:

| Index name | Index provisioning | Index ID |
|-------------------------------------|--------------------|--------------------------------------|
| CareerCoachIndex | 1 | 89137681-3e5c-4abf-9780-326c077d9c54 |
| Index status | Document count | Retriever ID |
| Active | 0 | 8966ad53-6963-4861-99df-8e91b76fcff4 |
| Last modified time | Storage used | Retriever |
| October 04, 2025, 19:07 (UTC+03:00) | 0 Bytes | Native retriever: Starter |

Below the index details, there is a table for 'Data sources (1/1)'. It lists one entry: 'CareerCoach...' (S3V2, Active, November 0..., Completed, Idle).

- **Access Control:** ACL file uploaded for CareerCoaches group (users: career.coach.one, career.coach.two).

The screenshot shows the 'Update S3' configuration page for the 'CareerCoach_DataSource'. Under the 'Access control list (ACL)' section, the 'Metadata files folder location - optional' field is set to 's3://bucket-career-coaches/course_access_acl.json'. The 'Sync run schedule' section includes fields for 'Frequency' (set to 'Daily') and 'Start time' (set to '02 : 56 (UTC)').

- **Content Moderation:** Global Controls list configured to block restricted keywords (e.g., Gambling, Casino).

Screenshot of the "Chat orchestration settings - new" page in the Amazon Q Business console.

The page shows the following configuration:

- Allow Amazon Q Business to automatically orchestrate chat queries across plugins and data sources**: Enabled. End users can always view and manually activate configured plugins from conversation settings in web app.
- Feature settings**:
 - Allow end users to upload files in chat content**: Enabled. This feature enables end users to upload files directly to chat in order to ask questions specific to the document.
 - Allow end users of the web experience to create and use Amazon Q Apps**: Enabled. This feature enables end users to customize existing functionality of the Amazon Q application for tailored tasks.
- Blocked words**:
 - Enter blocked words:
 - You can block 16 more words.
 - Blocked words listed: Gambling, Casino, Self-harm, Attack

Buttons: Cancel, Save.

CloudShell Feedback © 2025, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

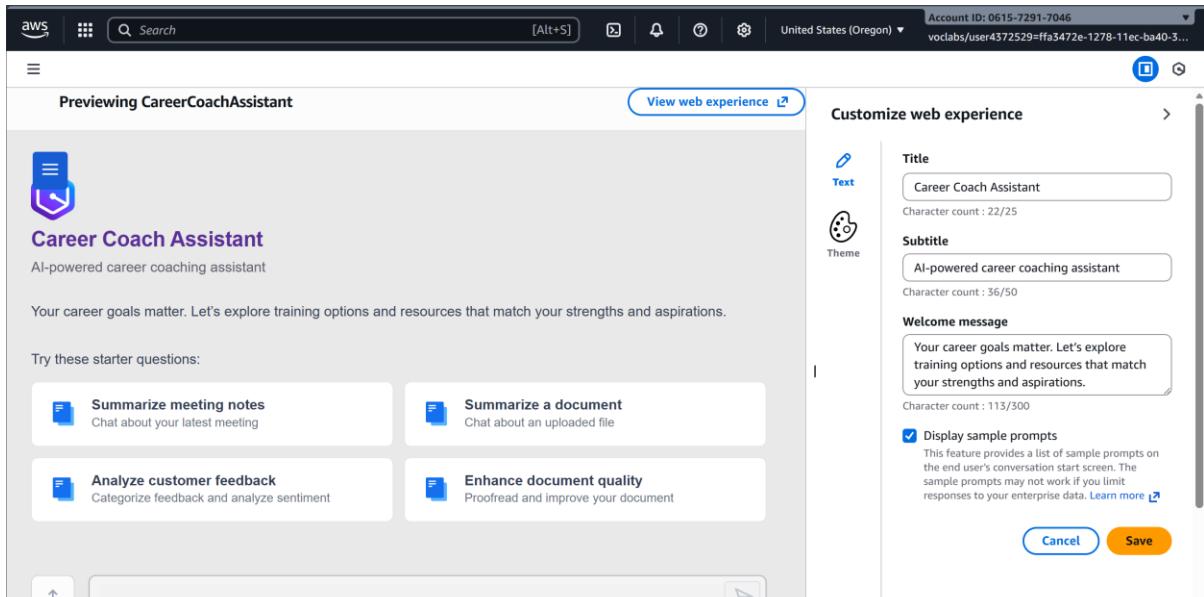
Screenshot of the "Global controls" page in the Amazon Q Business console.

The page shows the following global settings:

- Response settings**:
 - Allow end users to send queries directly to the LLM: On
 - Allow Amazon Q to fall back to LLM knowledge: On
 - Enable hallucination mitigation - new: Off
- Chat orchestration settings - new**:
 - Allow automatic routing to plugins and data sources: On
- Feature settings**:
 - Allow end users to upload files in chat content: On
 - Allow end users of the web experience to create and use Amazon Q Apps: On
- Blocked words (4)**:
 - Word: Gambling
 - Casino
 - Self-harm
 - Attack

Buttons: Actions, Preview web experience, Create topic control.

Enhancements



The screenshot shows the 'Customize web experience' panel for the 'Career Coach Assistant' preview. It includes sections for 'Title' (set to 'Career Coach Assistant'), 'Subtitle' (set to 'AI-powered career coaching assistant'), and a 'Welcome message' (set to 'Your career goals matter. Let's explore training options and resources that match your strengths and aspirations'). A checked checkbox for 'Display sample prompts' is present, with a note explaining it provides a list of sample prompts for the conversation start screen. Buttons for 'Cancel' and 'Save' are at the bottom.

Title
Career Coach Assistant
Character count : 22/25

Subtitle
AI-powered career coaching assistant
Character count : 36/50

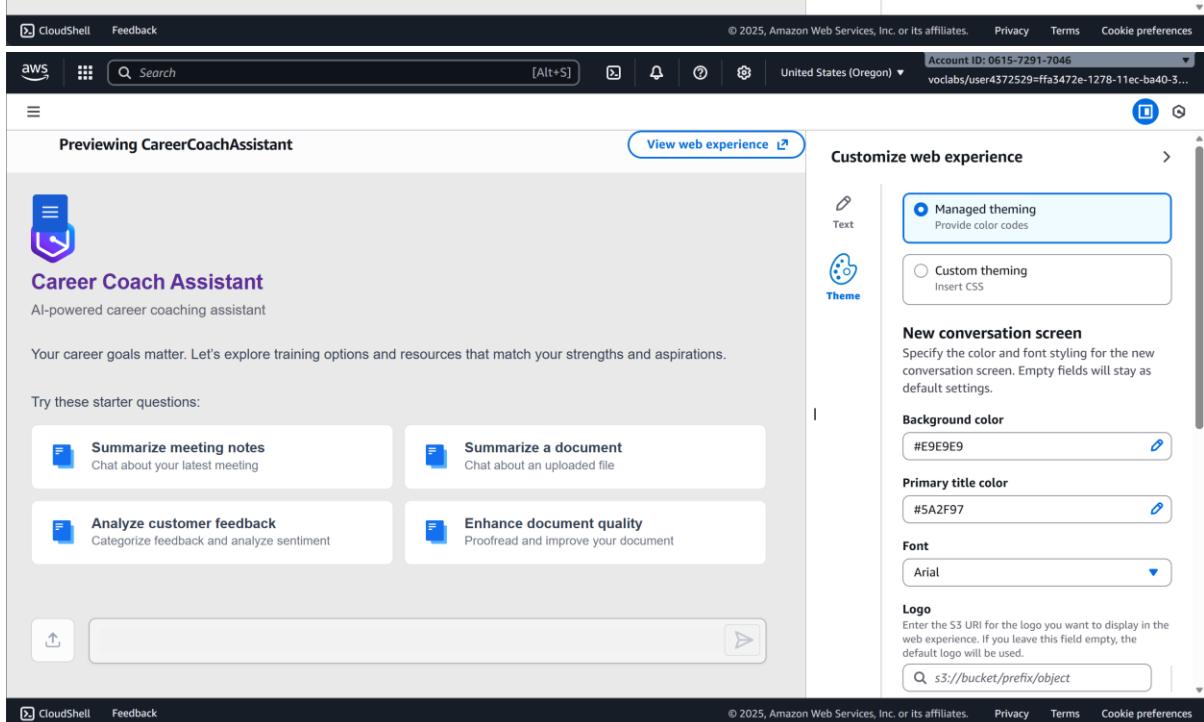
Welcome message
Your career goals matter. Let's explore training options and resources that match your strengths and aspirations.
Character count : 113/300

Display sample prompts
This feature provides a list of sample prompts on the end user's conversation start screen. The sample prompts may not work if you limit responses to your enterprise data. [Learn more](#)

Text

Theme

Cancel **Save**



The screenshot shows the 'Customize web experience' panel with the 'Managed theming' option selected. It also includes sections for 'New conversation screen' (specifying color and font styling), 'Background color' (#E9E9E9), 'Primary title color' (#5A2F97), 'Font' (Arial), and a 'Logo' input field (s3://bucket/prefix/object). Buttons for 'Cancel' and 'Save' are at the bottom.

Managed theming
Provide color codes

Custom theming
Insert CSS

New conversation screen
Specify the color and font styling for the new conversation screen. Empty fields will stay as default settings.

Background color
#E9E9E9

Primary title color
#5A2F97

Font
Arial

Logo
Enter the S3 URI for the logo you want to display in the web experience. If you leave this field empty, the default logo will be used.
s3://bucket/prefix/object

Text

Theme

Cancel **Save**