

## Google Cloud Skills Boost for Partners

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## Develop Advanced Enterprise Search and Conversation Applications

Course · 8 hours &lt; 1% complete

## Course overview

## Vertex AI Search

Build Vertex AI  
Search Apps using AI Applications
AI Applications Data  
Store Status Checker
Custom Embeddings with AI Applications

## Embeddings and Vector Search

Understanding embeddings with Vertex AI Text-Embeddings API

Course &gt; Develop Advanced Enterprise Search and Conversation Applications &gt;

Quick tip: Review the prerequisites before you run the lab

[End Lab](#)

01:29:33

Caution: When you are in the console, do not deviate from the lab instructions. Doing so may cause your account to be blocked. [Learn more.](#)[Open Google Cloud console](#)

Username

student-00-6e07729ae5b4e

Password

IOnF5Q8aL9rZ

# Build Vertex AI Search Apps using AI Applications

Lab 1 hour 30 minutes No cost Introductory

★★★★★

This lab may incorporate AI tools to support your learning.

GSP1152

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Lab instructions and tasks 0/100

GSP1152

Overview

Objectives

Setup and requirements

Task 1. Enable the Discovery Engine API for AI Applications

Task 2. Create and preview a website search app

Task 3. Create and preview a structured data search app

Task 4. Create and Preview an unstructured data search app

Congratulations!

## Overview

Vertex AI Search brings together the power of deep information retrieval, state-of-the-art natural language processing, and the latest in large language processing to understand user intent and return the most relevant results for the user.

You can deploy Vertex AI Search applications from AI Applications within the Google Cloud Console.

In this lab you will learn how to create search applications based on:

- websites
- structured data
- unstructured data

[View search app](#)

## Objectives

In this lab, you will learn how to perform the following tasks:

- Index public website data, structured and unstructured data.
- Perform search on your indexed data.
- Configure the display of your search results.
- Integrate Vertex AI Search with your web application.

## Before you click the Start Lab button

Read these instructions. Labs are timed and you cannot pause them. The timer, which starts when you click **Start Lab**, shows how long Google Cloud resources are made available to you.

This hands-on lab lets you do the lab activities in a real cloud environment, not in a

simulation or demo environment. It does so by giving you new, temporary credentials you use to sign in and access Google Cloud for the duration of the lab.

To complete this lab, you need:

- Access to a standard internet browser (Chrome browser recommended).

**Note:** Use an Incognito (recommended) or private browser window to run this lab. This prevents conflicts between your personal account and the student account, which may cause extra charges incurred to your personal account.

**Note:** Use only the student account for this lab. If you use a different Google Cloud account, you may incur charges to that account.

## How to start your lab and sign in to the Google Cloud console

1. Click the **Start Lab** button. If you need to pay for the lab, a dialog opens for you to select your payment method. On the left is the Lab Details pane with the following:

- The Open Google Cloud console button
- Time remaining
- The temporary credentials that you must use for this lab
- Other information, if needed, to step through this lab

**Incognito Window** if you are running the Chrome browser).

The lab spins up resources, and then opens another tab that shows the Sign in page.

**Tip:** Arrange the tabs in separate windows, side-by-side.

**Note:** If you see the **Choose an account** dialog, click **Use Another Account**.

3. If necessary, copy the **Username** below and paste it into the **Sign in** dialog.

student-00-6e07729ae5b4@qwiklabs.net



You can also find the Username in the Lab Details pane.

4. Click **Next**.

5. Copy the **Password** below and paste it into the **Welcome** dialog.

You can also find the Password in the Lab Details pane.

6. Click **Next**.

**Important:** You must use the credentials the lab provides you. Do not use your Google Cloud account credentials.

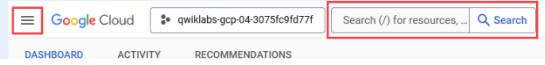
**Note:** Using your own Google Cloud account for this lab may incur extra charges.

7. Click through the subsequent pages:

- Accept the terms and conditions.
- Do not add recovery options or two-factor authentication (because this is a temporary account).

After a few moments, the Google Cloud console opens in this tab.

**Note:** To access Google Cloud products and services, click the **Navigation menu** or type the service or product name in the **Search** field.



## Task 1. Enable the Discovery Engine API for AI Applications

1. Navigate to **AI Applications** by searching for it at the top of the Cloud Console.

Click *Check my progress* to verify the objective.

Enable required API

**Check my progress**

## Task 2. Create and preview a website search app

A website search app makes it easier for users to find the information they are looking for on your website.

1. After you enable AI Applications, you will be taken to a **Create App** page to create your first app.

2. On the **Search for your website** card, click **Create**.

3. Leave the checkboxes checked, and for **App name** enter:

Google Cloud docs

4. For **Company Name**, enter:

Google Cloud Documentation

5. Click **Continue**.

6. On the Create a data store for your app page, click **+CREATE DATA STORE**.

7. Find the **Website Content** card and click **Select**.

**patterns to index header**, include the following URL pattern:

cloud.google.com/docs/\*

9. Click **Continue**.

10. On the Configure your data store page, in the **Data store name** field, enter:

Google Cloud Docs Website Content

Click **CREATE**.

11. On the data store page, make sure **Google Cloud Docs Website Content** is selected, and then click **Create**.

Click *Check my progress* to verify the objective.

Create a website search app

This search app will take about 2-3 minutes to deploy. You may want to take a brief break here before you can use the search app.

## Preview the website search app

12. In the side panel, select **Preview**.
13. In the search bar at the top of the Preview window, enter `Document AI` and press **Enter**.
14. Click the view icons to switch between mobile view and desktop view.

The screenshot shows the 'Search Preview' page within the Google Cloud Docs interface. At the top, there's a breadcrumb navigation: Apps > Google Cloud docs > Search Preview. Below the navigation, there are two small icons: a monitor and a smartphone. A note in a blue box says: 'Note: If you see the pop-up Search preview isn't ready yet, wait for few'. Below the note, a message in a box states: 'You created a search engine and a data store where you indexed a website and then performed a search across that website.' There is also a small 'i' icon in the top right corner of this message box.

## Task 3. Create and preview a structured data search app

Structured data can be used to make website content more visible to search engines. A structured data search app improves the discoverability of website content and provides users with a more relevant search experience.

1. Click the **AI Applications** logo to navigate back to the **Apps** page.

2. Click **+CREATE APP**.

3. On the **Create App** page, find the **CUSTOM SEARCH** card and click **Create**.

4. Leave the checkboxes checked, and for **App name** enter:

The screenshot shows a text input field with the placeholder 'Movie Database Search'. To the right of the input field is a small 'i' icon.

5. For **Company Name**, enter:

The screenshot shows a text input field with the placeholder 'Movie Searchers'. To the right of the input field is a small 'i' icon.

6. Click **Continue**.

7. On the **Data store** for your app page, click **+CREATE DATA STORE**.

8. Find the **Cloud Storage** card and click **Select**.

9. Select the **Structured data (JSONL)** radio option.

10. Under the header **Select a folder or a file you want to import**, select `clou`

The screenshot shows a dropdown menu with the path: `cloud-samples-data/gen-app-builder/search/kaggle_movies/movie_metadata.ndjson`. To the right of the menu is a small 'i' icon.

This Cloud Storage bucket contains an NDJSON-formatted dataset of movies made available by [Kaggle](#).

11. Click **Continue**.

12. On the **Review schema and assign key properties** page, review the columns available for each field and then click **Continue**.

13. On the Configure your data store page, in the **Data store name** field, enter:

The screenshot shows a text input field with the placeholder 'Structured Movie Data'. To the right of the input field is a small 'i' icon.

Click **CREATE**.

14. On the data stores page for your app, ensure **Structured Movie Data** is selected

15. On the left-hand navigation menu of your app, select the **Data** page.

16. Select the **Activity** tab.

**Note:** Please wait until the documents import before proceeding. This process may take several minutes to complete.

Upon success you will see the **Status** column change to **Succeeded** as shown in the image below:

The screenshot shows the 'Activity' tab interface. At the top, there's a header with 'Activity' and a 'Filter' button. Below the header is a table with three columns: 'Status', 'Detail', and 'Items succeeded'. The first row shows 'Import completed', 'No errors', and '45,437'. The 'Detail' column contains a link labeled 'View details'.

18. Click the **Schema** tab to see the auto-generated schema for your dataset. Notice that for auto-generated schemas, all fields are retrievable, indexable, facetable and searchable.

The screenshot shows the 'Schema' tab interface. At the top, there are five filter buttons: 'Dimension', 'Retrievable', 'Indexable', 'Dynamic Facetable', and 'Searchable'. Below the filters is a note: 'Note: Click on the image to zoom further.'.

### Preview the Movies search app and configure the search results display

19. In the navigation menu, click **Preview** to test the search app.

20. In the search bar, enter:

The screenshot shows the 'Preview' page interface. A search bar at the top contains the text 'Google'.

Notice that the full schema is returned. Often times you will not need to display all of the items returned by the full schema. To customize the values to display, AI Applications allows you to configure only the values you want to display. You will see how this is achieved in the next steps.

21. In the left-hand navigation panel, click **Configurations**.

22. Open the **Configure fields in results** dropdown and map fields in your data store to the attributes to be displayed in search results:

Key	Value
Title	title
Thumbnail	poster_path
URL	homepage
Tex 1	tagline
Tex 2	release_date

Click **Check my progress** to verify the objective.

The screenshot shows a button labeled 'Check my progress'.

24. Back on the **Preview** page, enter the following in the search bar:

The screenshot shows the 'Preview' page interface. A search bar at the top contains the text 'Harry Potter'.

Press **Enter** to view the search results.

The output results have been formatted according to the fields you configured and should look similar to the results pictured below.

The screenshot shows the search results page for 'Harry Potter'. The search bar at the top contains 'Harry Potter'. Below the search bar, it says 'Showing you 10 out of 1,046 results'. The results list includes items like 'Harry Potter (2001)', 'Harry Potter and the Prisoner of Azkaban (2004)', and 'Harry Potter and the Chamber of Secrets (2002)'.



## Integration

In this section you will review available methods of integrating configured search capabilities into your web or server based applications.

### Web

25. In the left-hand side panel, click **Integration**. Notice at the top of the resulting page that you are on the **Widget** tab with code to embed your search app in web-based integrations.

Here you could select the authorization type used to allow users to interact with the search widget. Select **JWT** or **OAuth Based** or **Public Access** depending on your needs. If using **JWT** or **OAuth Based** you will need to configure your

You can also restrict the widget's usage to specific domains specified in the **Add allowed domains for the widget** list.

26. Next, click on the **API** tab.

Here you can enter a search query and see the API call that could be used to query your app.

## Task 4. Create and Preview an unstructured data search app

Unstructured data is data that does not have a predefined format. This type of data can be difficult to search within using traditional search engines. An unstructured data search app can be used to make this data more accessible to gain insights that can be

1. Click the **AI Applications** logo to navigate back to the **Apps** page.
2. Click **+CREATE APP**.
3. On the **Create App** page, find the card for **Custom search** and click **Create**.
4. Once again, leave the checkboxes checked. Enter the following for **App name**:

 [X]

5. For **Company Name** enter:

 [X]

Then click **Continue**.

6. On the **Data Stores** page for your app, click **+CREATE DATA STORE**.

8. For the data type, select **Unstructured documents (PDF, HTML, TXT and more)**.

9. Under the header **Select a folder or a file you want to import**, select the **Folder** type and enter the following value:

 [X]

Then click **Continue**.

This Cloud Storage bucket contains earnings report PDFs from the [Alphabet investor site](#).

10. On the **Configure your data store** page, in the **Data store name** field, enter:



12. Select the **Layout Parser** for Vertex AI Search to identify content elements like text blocks, tables, lists, and structural elements such as titles and headings and use them to define the organization and hierarchy of a document.

13. Click **CREATE**.

14. On the **Data Stores** page for your app, ensure the **Unstructured PDF Data** data store is selected and click **CREATE**.

15. From the left-hand navigation menu, click **Data**, then click on the **Activity** tab.

When the import process is finished, you will see `Import completed` in the **Status** column.

**Note:** It may take 5-10 minutes to index all of the unstructured data found in the PDF documents. You can complete the progress check below, then take a break for a few minutes to allow it to complete before completing the steps to see the query in action.

## Preview the Alphabet Investor PDFs search app

17. In the navigation menu, click **Preview** to test the search app.

18. In the search bar, enter `Google revenue in 2008`, and then press **Enter** to search the PDFs.

Notice the summary as well as the results. Below is an example of search results for the query provided.

The screenshot shows a search interface with a navigation bar: Apps > Alphabet Investor PDFs > Search Preview. The search bar contains the query "Google revenue in 2008". Below the search bar, a message says "Generative AI is experimental". The main content area displays a summary: "Google reported revenues of \$5.54 billion for the quarter ended September 30, 2008, an increase of 31% compared to the third quarter".

The screenshot shows a list of search results. The first result is a PDF titled "2008Q3\_earnings\_google.pdf" with the URL [1] https://storage.cloud.google.com/cloud-samples-data/gen-a... The second result is a PDF titled "2008Q2\_earnings\_google.pdf" with the URL [2] https://storage.cloud.google.com/cloud-samples-data/gen-a... The third result is a PDF titled "2008Q1\_earnings\_google.pdf" with the URL [3] https://storage.cloud.google.com/cloud-samples-data/gen-a... Below the results, there is a note: "Click *Check my progress* to verify the objective." A button labeled "Check my progress" is visible.

## Congratulations!

You learned how to create Vertex AI Search apps using different types of data stores. You configured the display of the search results. You also viewed the code to embed your search app in a web application and viewed an example query to call your app via an API call.

## Next steps

- Learn more about Vertex AI on the [Google Cloud Tech YouTube channel](#).

## Google Cloud training and certification

...helps you make the most of Google Cloud technologies. [Our classes](#) include technical skills and best practices to help you get up to speed quickly and continue your learning journey. We offer fundamental to advanced level training, with on-demand, live, and virtual options to suit your busy schedule. [Certifications](#) help you validate and prove your skill and expertise in Google Cloud technologies.

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