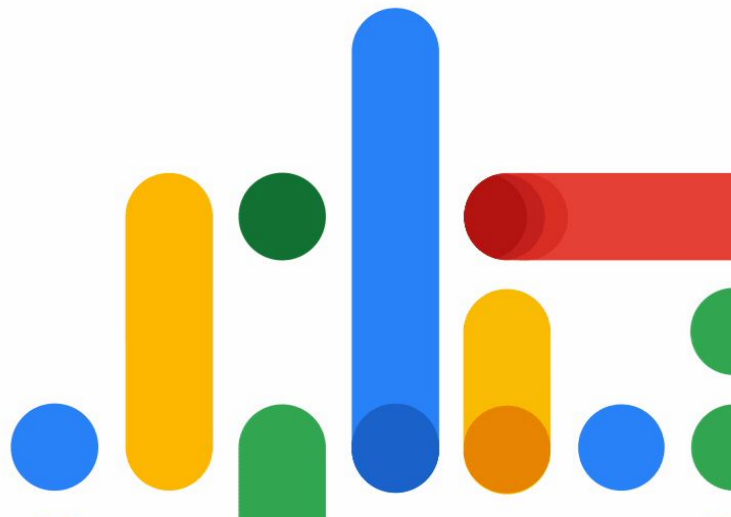


Generative AI Hands On

# Advanced Lab

김태범

AI Consultant, Google Cloud





김태범

AI Consultant, Google Cloud

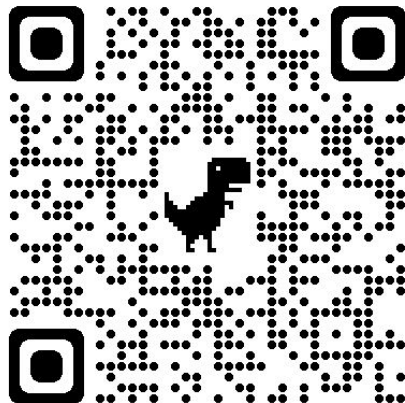
## WIFI 안내

ID :summit\_seoul\_23\_Track5


PW : GoogleCloud5



## Hands On 가이드 Advanced Lab



<https://shorturl.at/nEMR5>



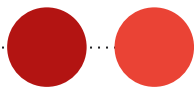
## 오늘의 실습 순서

Vertex AI Search & Vertex AI Workbench 소개

Lab 시나리오 소개

실습 가이드

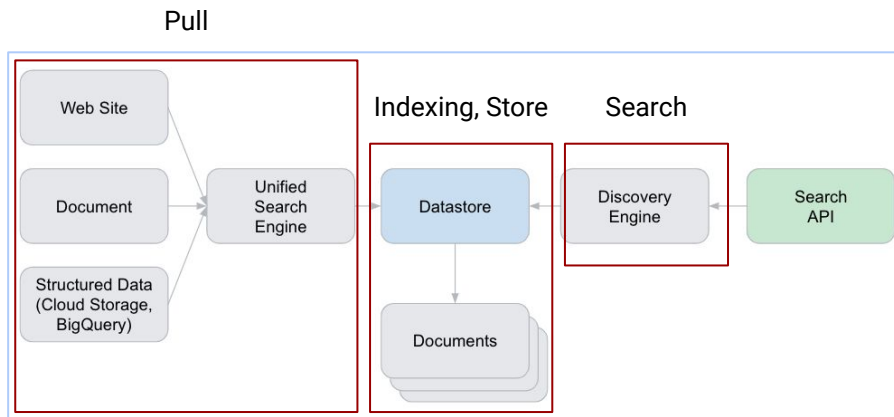
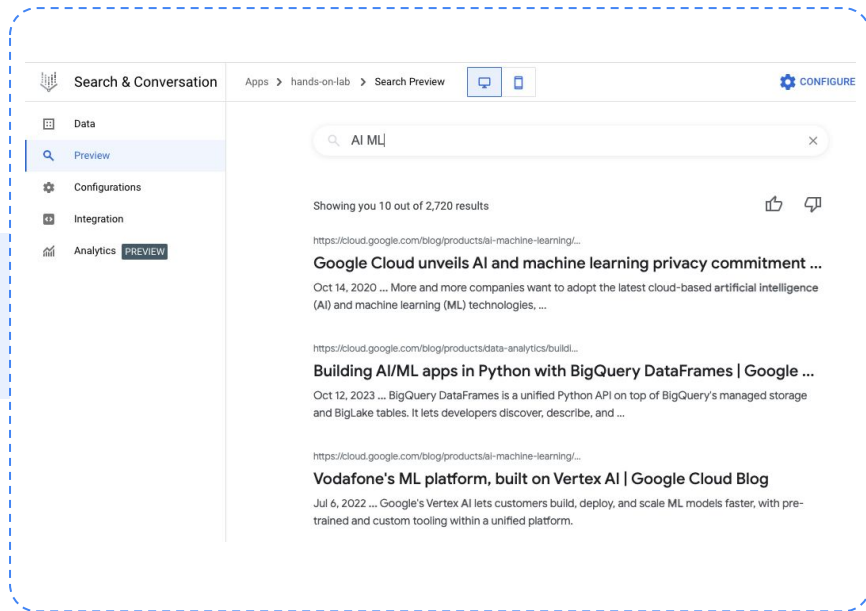
- Qwiklab 시작하기
- Vertex AI Search 생성하기
- Vertex AI Workbench 에서 노트북 실행하기
- Notebook 소개



# Vertex AI Search & Vertex AI Workbench 소개

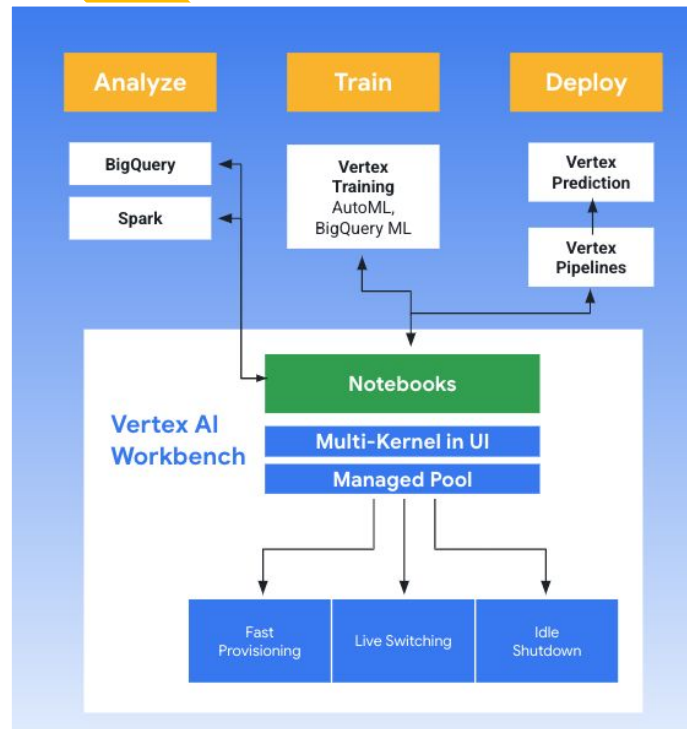
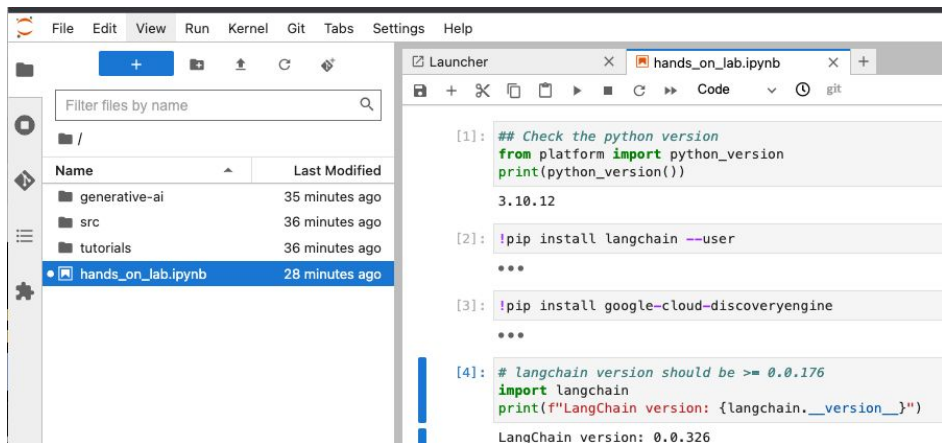
# Vertex AI Search

나만의 검색엔진을 단 몇분만에 만들 수 있습니다.

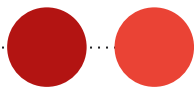


# Vertex AI Workbench

데이터 분석 및 AI 개발을 위한 통합 인터페이스를 제공합니다.



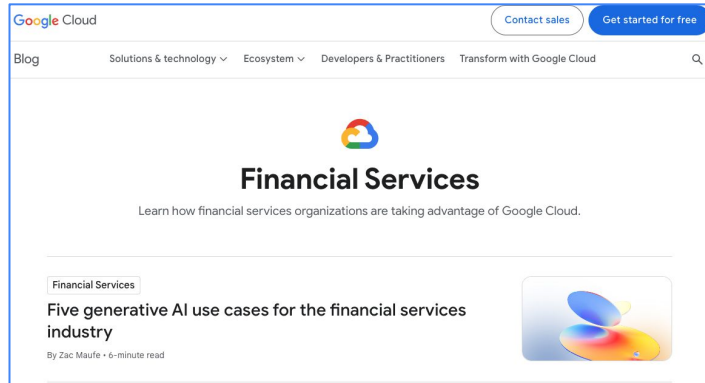
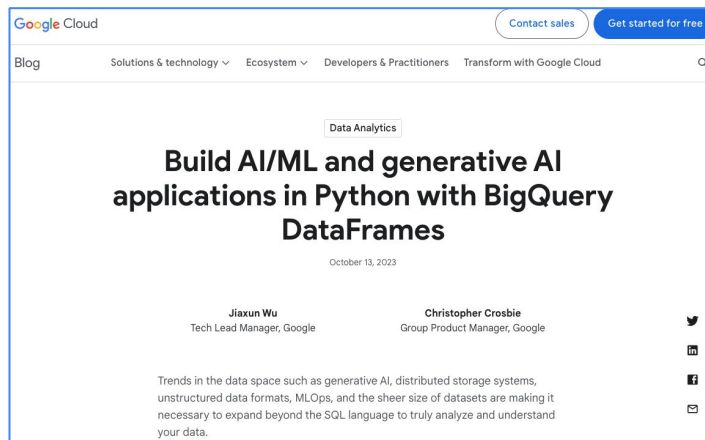
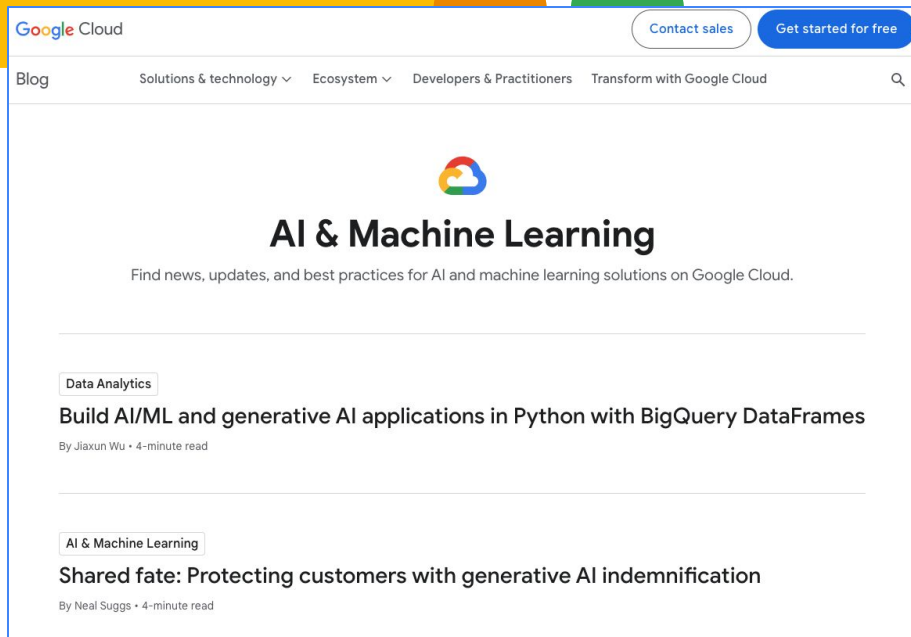




# Lab 시나리오 소개

# Cloud Blog Newsletter Creator

<https://cloud.google.com/blog/>

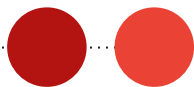


# Demo



## Demo(Short)





# Qwiklab 시작하기

# Qwiklabs 체험 시작하기는 아주 쉽습니다!

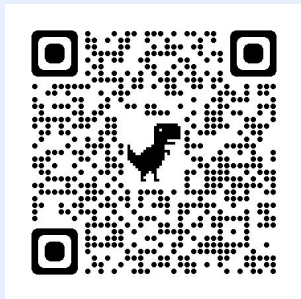
## 01


브라우저를 열고 **시크릿 모드**(또는 **프라이빗 모드**)에서 탭을 시작한 후 다음 URL을 입력합니다:

`https://explore.qwiklabs.com`

# 02

우측 상단의 “Join(가입)”을 클릭하여 포털에 가입합니다.  
가입 후 아래 QR코드로 가입한 이메일을 기입해주세요.



[Join](#)[Sign in](#)

Google Cloud Training

Create account

\* First name

\* Last name

\* Email

\* Company

\* Password

\* Password confirmation

☒ Send me occasional product updates, announcements, and offers.

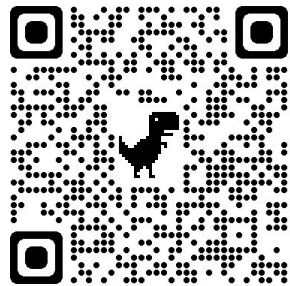
By joining you agree to Qwiklabs' [Terms of Service](#) and [Privacy Policy](#).

[Sign in instead](#)[Create account](#)

## Qwiklabs 체험 시작하기는 아주 쉽습니다!

# 03

페이지를 아래로 스크롤하여 [Generative AI Explorer](#) 라고 적힌 랩(Lab)을 클릭합니다.  
Lab이 보이지 않는다면 아래 QR코드로 로그인한 이메일을 기입해주세요.

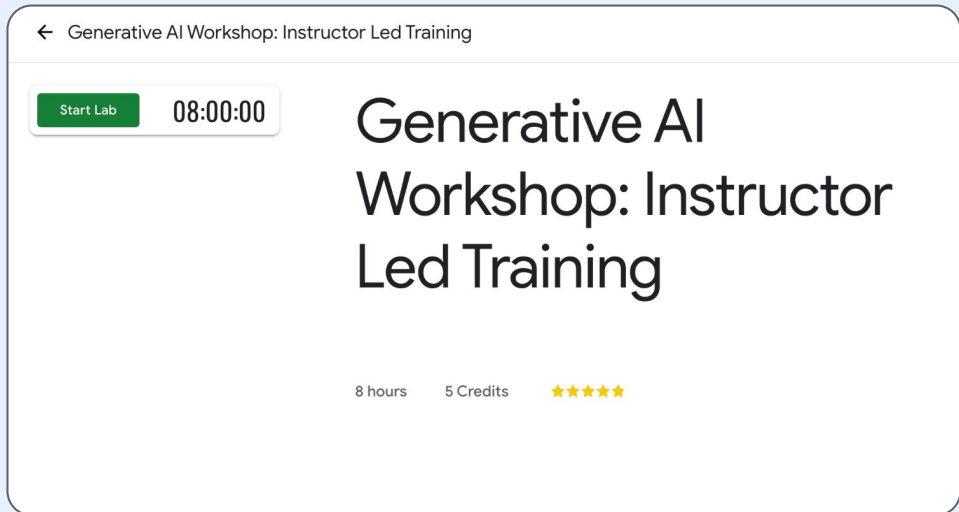




Qwiklabs 체험 시작하기는 아주 쉽습니다!

# 04

Start Lab 버튼 클릭 후  
몇 분 기다리십시오.



# Qwiklabs 체험 시작하기는 아주 쉽습니다!

## 05

“Open Google Cloud console”  
을 우클릭하여 **Incognito** 창  
으로 열어주세요.

임시 사용자 ID와 비밀번호를  
복사한 후,

다음에 나타나는 구글 클라우드  
콘솔에서 사용합니다.

← Generative AI Workshop: Instructor Led Training

End Lab

07:59:46

**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

GCP Username

student-03-d787c6f9a5c1

GCP Password

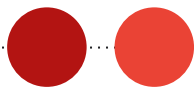
U1xovZM6cqgC

Generative AI  
Workshop: Instructor  
Led Training

8 hours

5 Credits

★★★★★



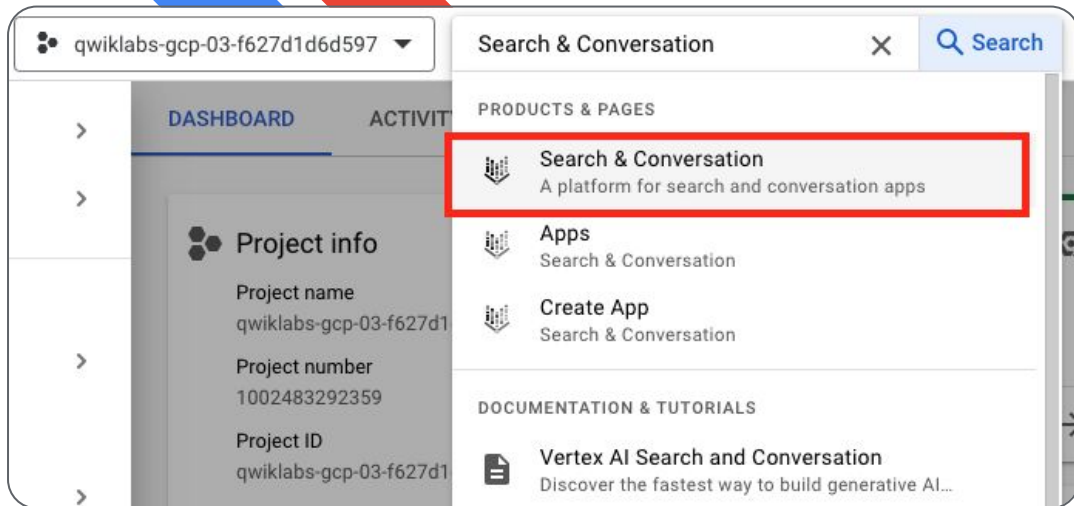
# Vertex AI Search

## 생성하기

# Vertex AI Search 시작하기

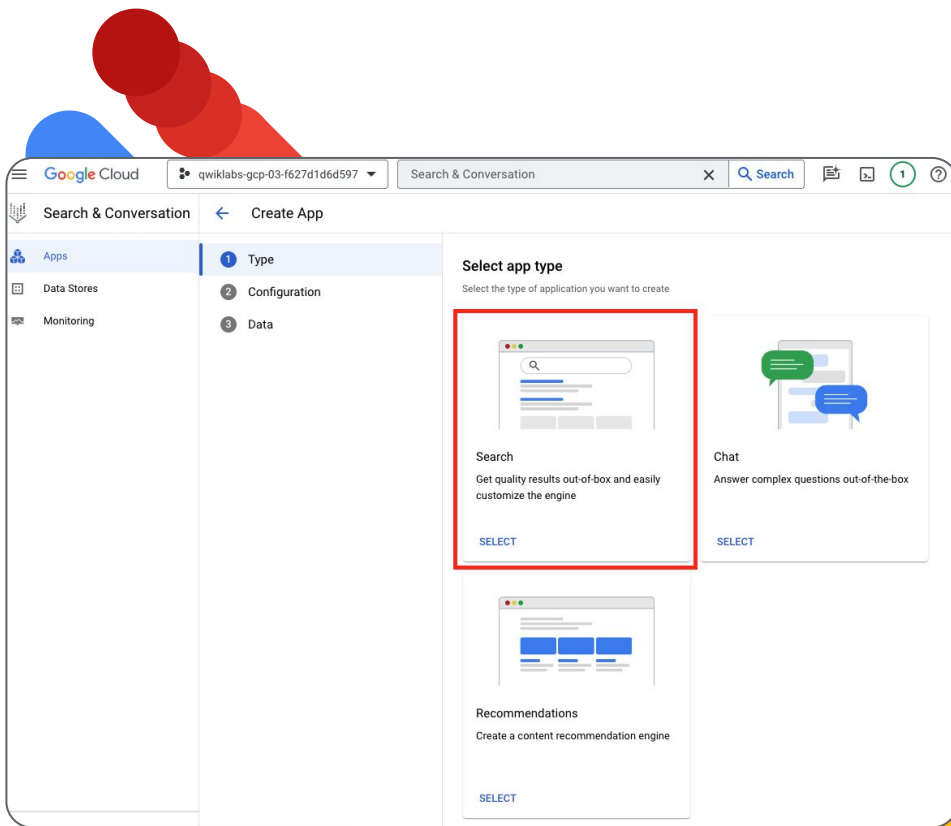
## Cloud Console 상단의

검색창에서 Search & Conversation  
을 검색해주세요.



# Vertex AI Search 시작하기

App 생성 화면에서 App Type으로  
Search 를 선택해주세요.



# Vertex AI Search 시작하기

App 이름(가상의 이름), Company Name을 기입하시고, Multi-region에 global 선택을 확인한 뒤 Continue 버튼을 눌러주세요.

Search & Conversation   ←   Create App

Apps  
Data Stores  
Monitoring

After turning on Enterprise features, it can take up to 5 minutes for the features to become available.  
[Learn more about features and prices](#)

**Advanced LLM features** ☒

For unstructured and Advanced website search you get:

- Search summarization
- Search with follow-ups

You can change this setting at any time.  
After turning on Advanced LLM features, it can take up to 5 minutes for the features to become available.  
[Learn more about features and prices](#)

**Your app name**

App name \*  
hands-on-lab

ID: hands-on-lab\_1698648397577. It cannot be changed later. [EDIT](#)

**External name of your company or organization**

Company name \*  
hands-on-lab

Providing your company name helps the model provide higher-quality responses

**Location of your app**

We recommend that you choose the **global** location, if you do not have compliance or regulatory reasons to locate your data in a particular multi-region. (EU and US regions are currently in preview)

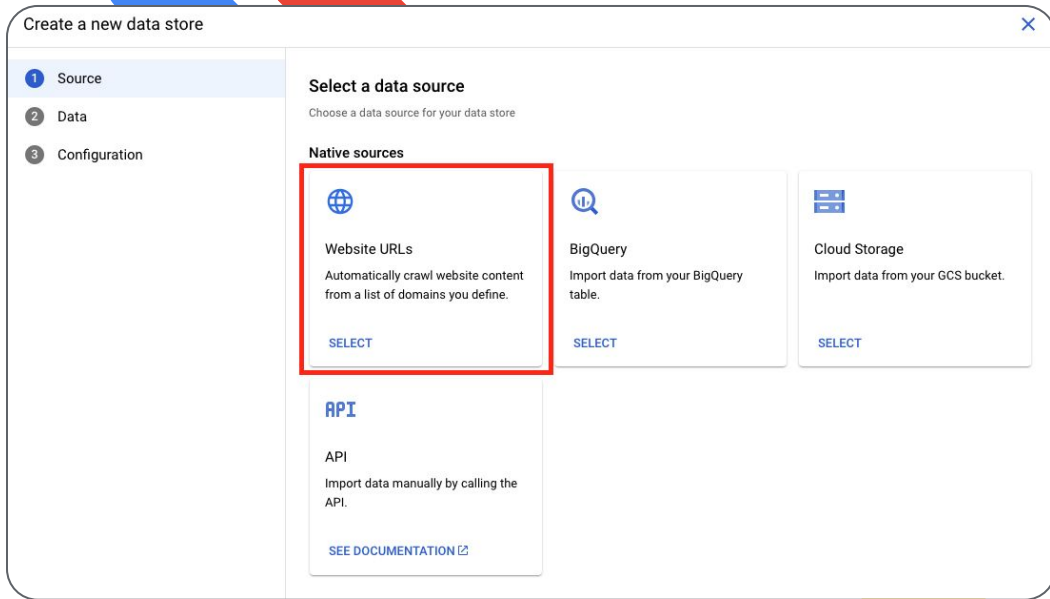
Multi-region \*  
global (Global)

You cannot change it later.

[CONTINUE](#) [CANCEL](#)

# Vertex AI Search 시작하기

Create New Datasource 버튼 클릭  
후 Data source를 Website URLs로  
선택해주세요.



# Vertex AI Search 시작하기

Advanced website indexing 옵션  
체크 해제를 확인해주시고 Index  
대상 사이트에

[cloud.google.com/blog/products/](https://cloud.google.com/blog/products/)\*

를 추가해주세요.

Create a new data store

✓ Source  
2 Data  
3 Configuration

**Specify the websites for your data store**  
Specify the list of websites you wish to index for your data store

**Want advanced website indexing?**

**Advanced website indexing** ☒

- Prerequisite for summarization and search with follow-ups (with Advanced LLM features), Chat, and Recommendations
- Higher index refresh frequency
- API support for adding and updating web pages
- Lower latency
- Image search, where you can use an image as a query

Note: Requires domain verification and will incur indexing cost.  
You cannot change this setting later.  
[Learn more about features and prices](#)

**Specify the URLs to index**

Sites to include \*

cloud.google.com/blog/products/\*

One site per line, https not needed 1/10

Sites to exclude

One site per line, https not needed 0/300

You can use the operations listed below  
Individual pages: www.mysite.com/faq.html  
Entire site: www.mysite.com/\*  
Parts of site: www.mysite.com/faq/\*  
Entire domain: \*.mysite.com

CONTINUE CANCEL



# Vertex AI Search 시작하기

Datastore 이름을 지정해주세요.

Create a new data store

- ✓ Source
- ✓ Data
- 3 Configuration

**Configure your data store**  
Configure additional settings for your data store

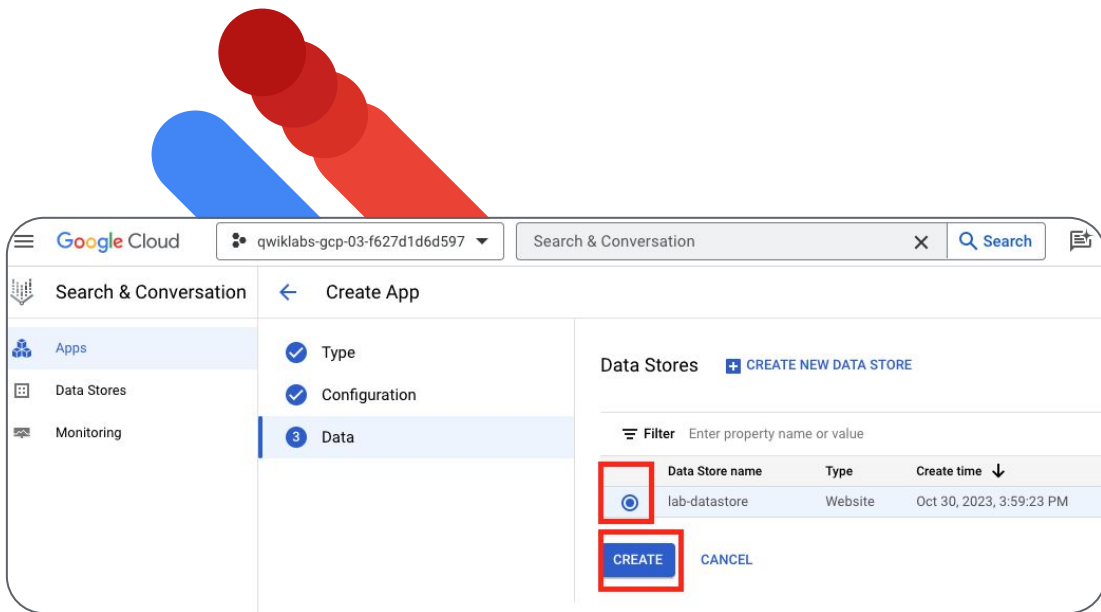
**Location of your data store**  
Multi-region  
global (Global)

**Your data store name**  
Data store name \*  
lab-datastore  
ID: lab-datastore\_1698649093843. cannot be changed later. [EDIT](#)

[CREATE](#) [CANCEL](#)

# Vertex AI Search 시작하기

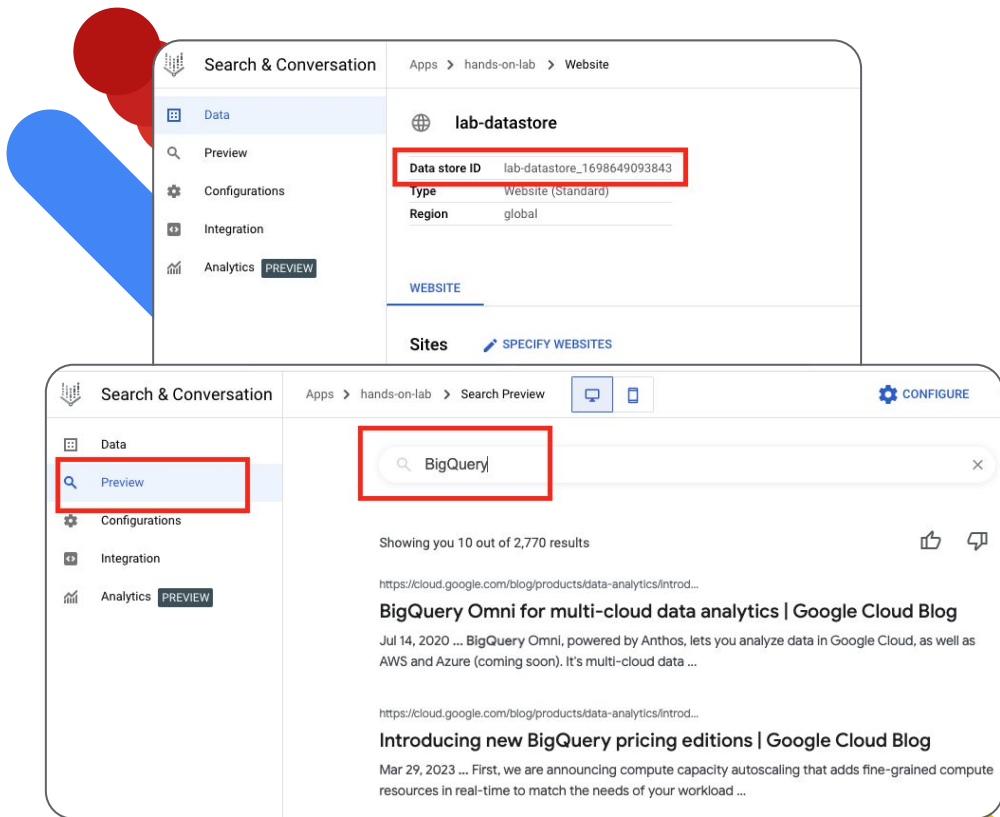
Data Store 라디오버튼 체크 후  
Create을 하면 App이 생성됩니다.

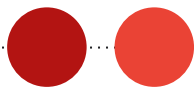


# Vertex AI Search 시작하기

생성된 App의 Data Store ID를  
확인해주세요. (추후  
Notebook에서 사용)

Preview 탭에서 BigQuery 라고  
검색하시면 페이지 검색 결과를  
보실 수 있습니다.





# Vertex AI Workbench

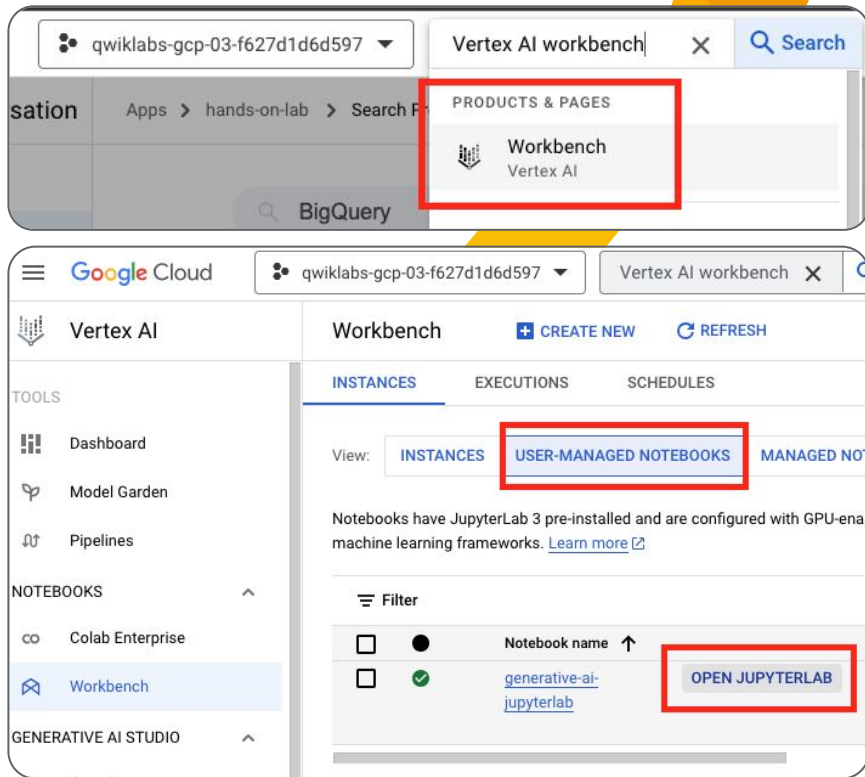
## 에서 노트북 실행하기

# Vertex AI Workbench 시작하기

Console 검색창에 Vertex AI Workbench 검색 후 Workbench로 접속하세요.

이후 USER-MANAGED NOTEBOOKS 메뉴를 클릭하시면 생성된 VM을 확인하실 수 있습니다.

OPEN JUPYTERLAB을 클릭해주세요.

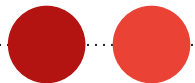


# Vertex AI Workbench 시작하기

아래 URL에 접속하여 이번 실습에 사용할 노트북 파일을 받아주세요.  
[https://storage.googleapis.com/hackathon-seoul/hands\\_on\\_lab.ipynb](https://storage.googleapis.com/hackathon-seoul/hands_on_lab.ipynb)

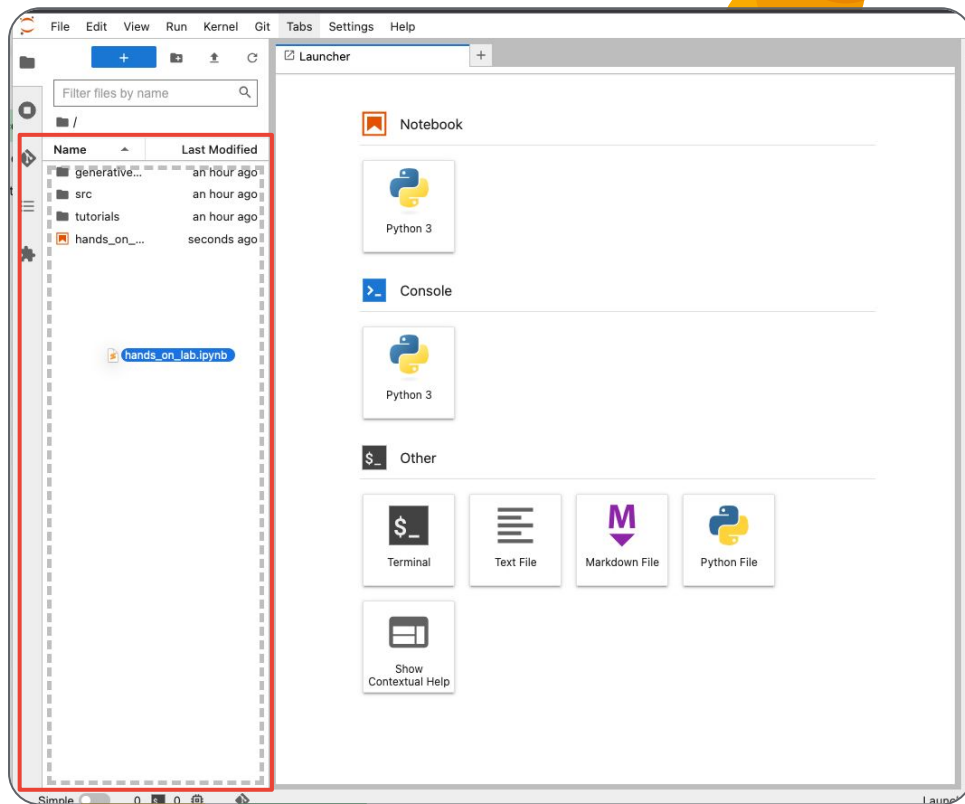
또는

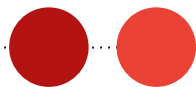
<https://shorturl.at/lopX1>



# Vertex AI Workbench 시작하기

다운로드 받은 노트북 파일을  
노트북의 파일 브라우저로  
드래그앤드로우 하시면 노트북  
파일이 업로드 됩니다.

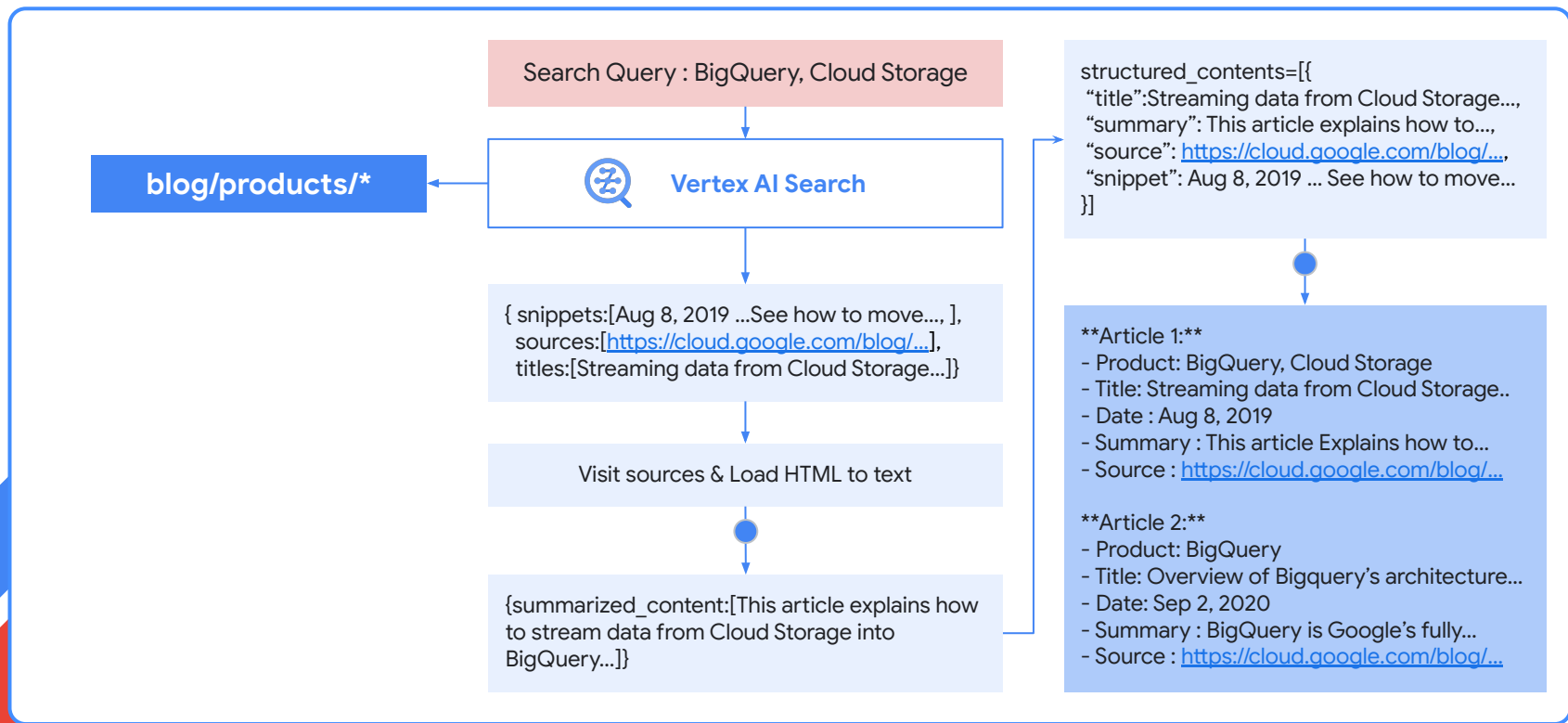




# Notebook 소개



# Notebook Workflow



# Searching & Retrieving

BigQuery, Cloud Storage



Vertex AI Search

```
{ snippets:[Aug 8, 2019 ...See how to move..., ],  
  sources:[https://cloud.google.com/blog/...],  
  titles:[Streaming data from Cloud Storage...]}
```

```
def get_relevant_snippets(self, query: str) -> List[str]:  
    """Retrieve snippets from a search query"""  
    res = self._search(query)  
    snippets = []  
    sources = []  
    titles = []  
  
    for result in res.results:  
        data = MessageToDict(result.document._pb, preserving_proto_field_name=True)  
        # structured  
        if data.get('derived_struct_data', {}) == {}:  
            snippets.append(data.get('struct_data', {}))  
        else:  
            # web  
            if data.get('derived_struct_data', {}).get('snippets', {}):  
                for d in data.get('derived_struct_data', {}).get('snippets', []):  
                    if d.get('snippet') is not None:  
                        snippets.append(d.get('snippet'))  
                        sources.append(data.get('derived_struct_data', {}).get('link', ''))  
                        titles.append(data.get('derived_struct_data', {}).get('title', ''))  
            else:  
                # unstructured  
                derived_struct_data = data.get('derived_struct_data', {})  
                if derived_struct_data.get('extractive_answers') is not None:  
                    snippets.append(derived_struct_data.get('extractive_answers')[0].get('content'))  
                    sources.append(derived_struct_data.get('link'))  
  
    return snippets, sources, titles
```

Search Query : BigQuery, Cloud Storage



Vertex AI Search

```
{ snippets:[Aug 8, 2019 ...See how to move..., ],  
  sources:[https://cloud.google.com/blog/...],  
  titles:[Streaming data from Cloud Storage...]}
```

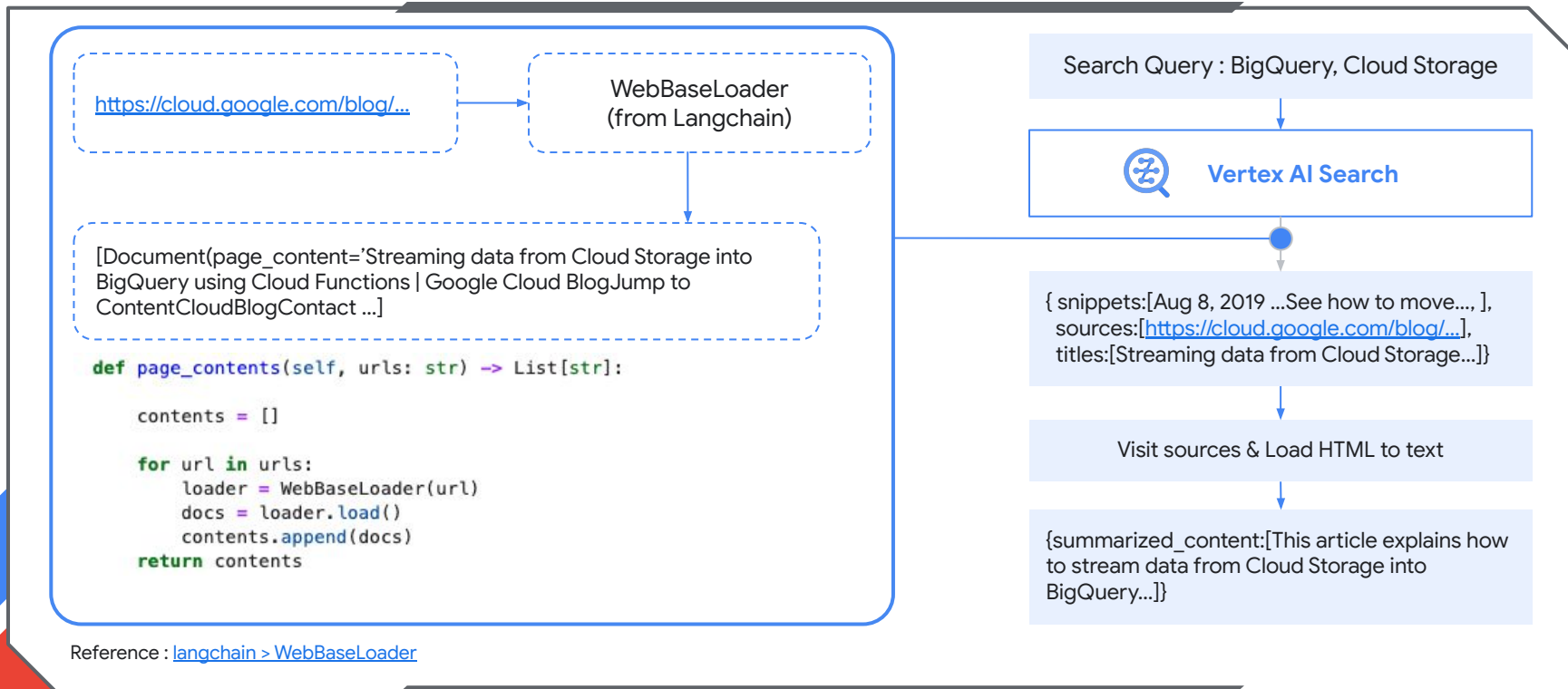
Visit sources & Load HTML to text

```
{summarized_content:[This article explains how  
to stream data from Cloud Storage into  
BigQuery...]}
```

Code : Reference : [langchain-google-cloud-es-search](#)

Reference : [Discovery Engine > SearchRequest](#), [Discovery Engine > SearchResponse](#)

# Visit url & Get Contents



# Prompt Engineering

[Document(page\_content='Streaming data from Cloud Storage into BigQuery using Cloud Functions | Google Cloud BlogJump to ContentCloudBlogContact ...']

PaLM2  
(text-bison)

This article explains how to stream data from Cloud Storage into BigQuery using Cloud Functions. It discusses the benefits of using Cloud Functions for this purpose, including automatic scaling...

```
CONTENT_SUMMARIZE_INSTRUCTIONS = """Article: {input_content}

You will generate summary of the above article

Guidelines:
- Summary should be 4-5 sentences long
"""

summarization_prompt = PromptTemplate(
    template=CONTENT_SUMMARIZE_INSTRUCTIONS,
    input_variables=["input_content"],
)

summarize_llm = VertexAI(model_name="text-bison-32k", temperature=0.1, max_output_tokens=1024)
```

Reference : [langchain > Google Cloud Vertex AI](#)

Search Query : BigQuery, Cloud Storage



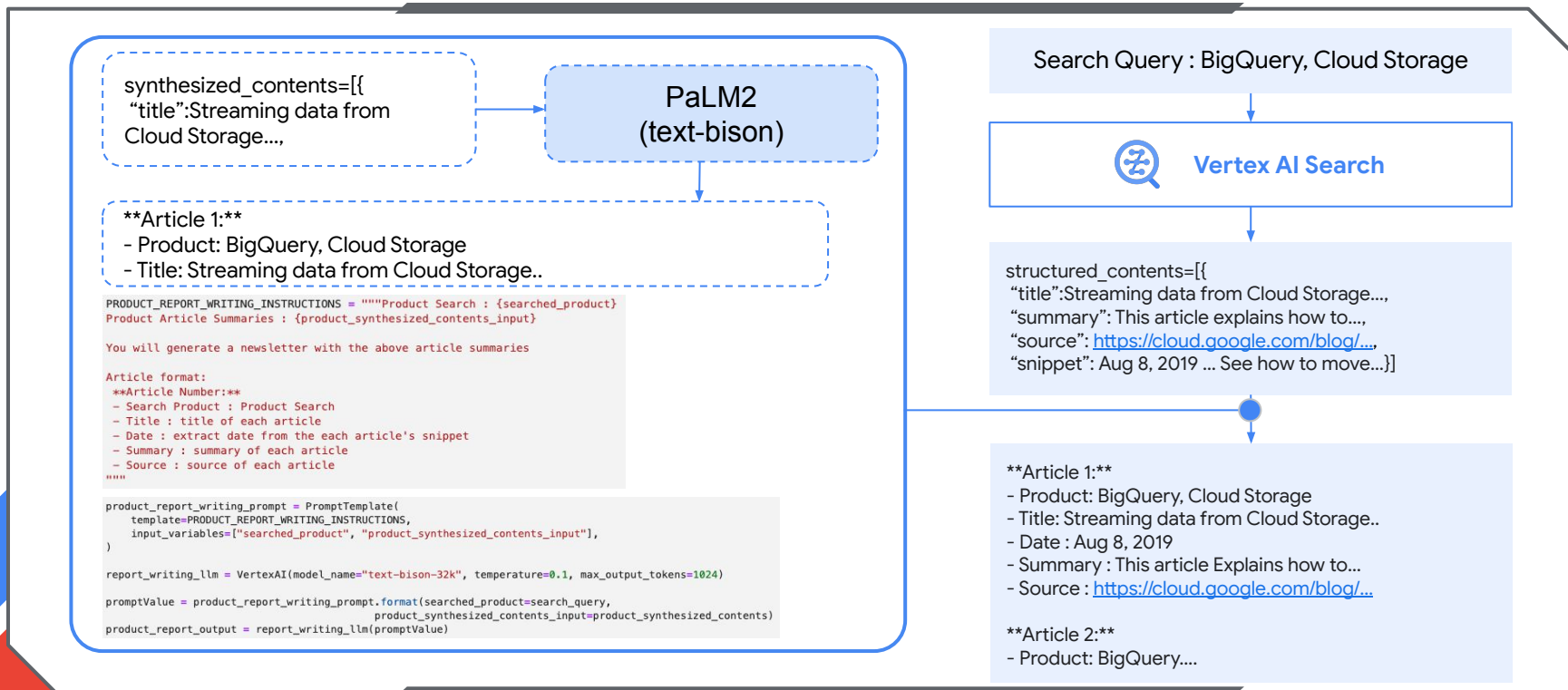
Vertex AI Search

{ snippets:[Aug 8, 2019 ...See how to move..., ],  
sources:[<https://cloud.google.com/blog/...>],  
titles:[Streaming data from Cloud Storage...]}

Visit sources & Load HTML to text

{summarized\_content:[This article explains  
how to stream data from Cloud Storage into  
BigQuery...]}

# Prompt Engineering



## 추가 과제

01

더 많은 블로그 포스트를 **Newsletter**에 담아보기 (현재 3개의 Post)

02


**Instruction Prompt**로 **Newsletter** 포맷 변경해보기

03

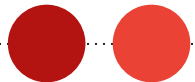

다른 웹사이트로 실험해보기 ([cloud.google.com/blog/topics/](https://cloud.google.com/blog/topics/)\*)

04

다른 **Data Type**으로 실험해보기 (PDF)



지금부터 약 60분 동안 실습을  
진행해주세요. (16:20 까지)



# Closing + Kahoot

오후 4:20 - 오후 4:30

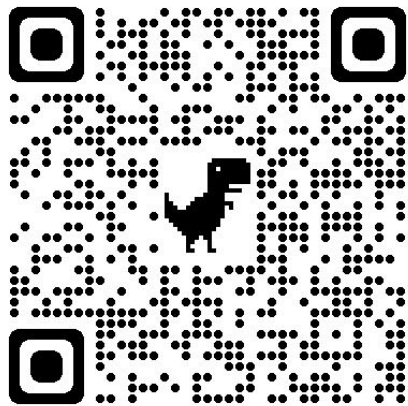






Quiz 접속하기

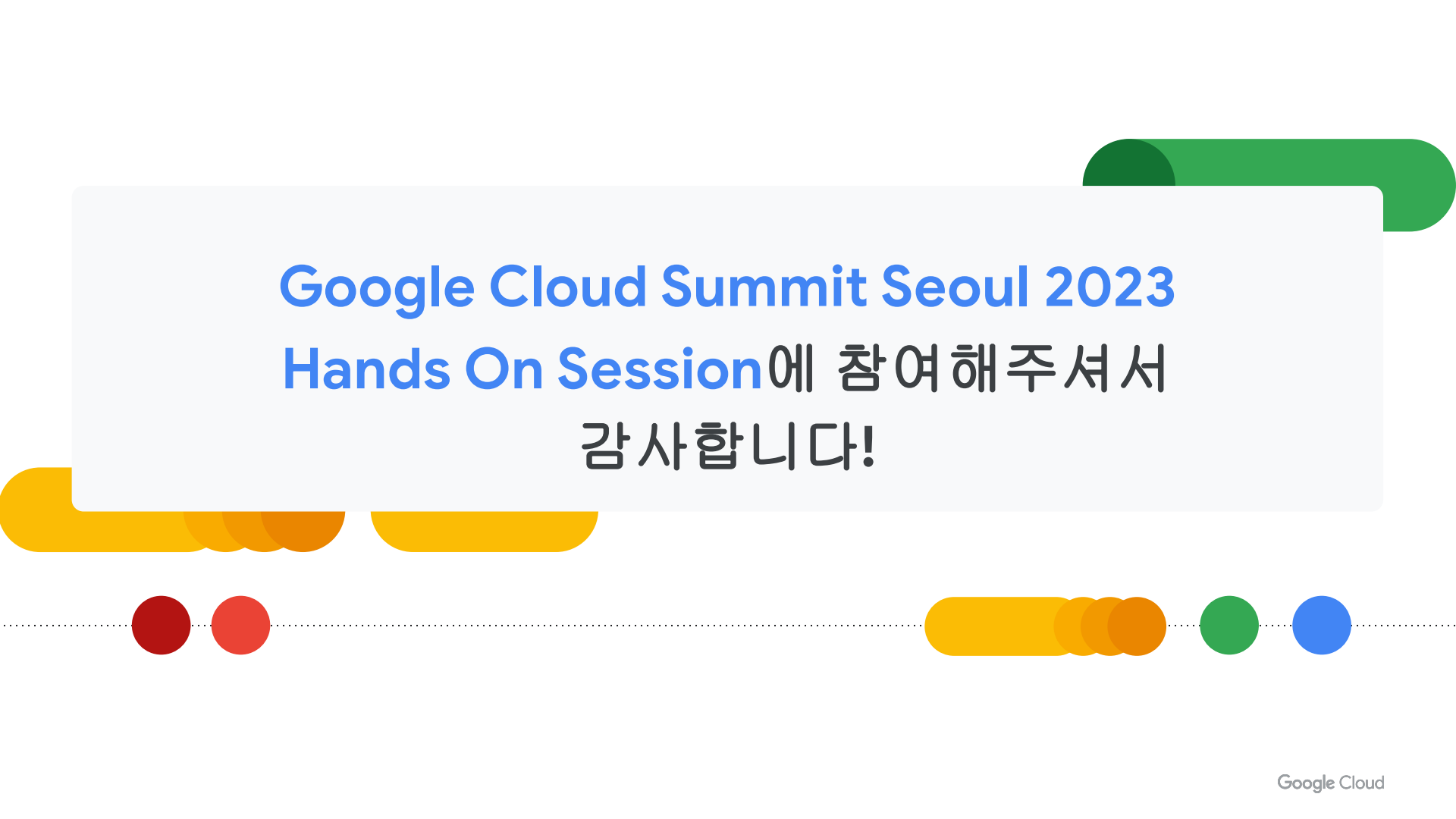
휴대폰으로 다음  
**QR Code**를 이용해서  
퀴즈 페이지에  
접속해주세요.



Gen AI 컨설팅  
서비스 등록하기

Google Cloud와 함께  
생성형 **AI** 여정을  
시작하세요!

<https://bit.ly/GenAILabs>



Google Cloud Summit Seoul 2023  
Hands On Session에 참여해주셔서  
감사합니다!