

Double-click (or enter) to edit

## ✓ PDF Query Using Langchain

```
!pip install langchain
!pip install openai
!pip install PyPDF2
!pip install faiss-cpu
!pip install tiktoken
```

```
Requirement already satisfied: exceptiongroup in /usr/local/lib/python3.1
Collecting marshmallow<4.0.0,>=3.18.0 (from dataclasses-json<0.7,>=0.5.7-
  Downloading marshmallow-3.20.1-py3-none-any.whl (49 kB)
    49.4/49.4 kB 2.8 MB/s eta 0
Collecting typing-inspect<1,>=0.4.0 (from dataclasses-json<0.7,>=0.5.7->l
  Downloading typing_inspect-0.9.0-py3-none-any.whl (8.8 kB)
Collecting jsonpointer>=1.9 (from jsonpatch<2.0,>=1.33->langchain)
  Downloading jsonpointer-2.4-py2.py3-none-any.whl (7.8 kB)
Requirement already satisfied: typing-extensions>=4.2.0 in /usr/local/lib
Requirement already satisfied: charset-normalizer<4,>=2 in /usr/local/lib
Requirement already satisfied: urllib3<3,>=1.21.1 in /usr/local/lib/pytho
Requirement already satisfied: certifi>=2017.4.17 in /usr/local/lib/pytho
Requirement already satisfied: greenlet!=0.4.17 in /usr/local/lib/python3
Requirement already satisfied: packaging>=17.0 in /usr/local/lib/python3.
Collecting mypy-extensions>=0.3.0 (from typing-inspect<1,>=0.4.0->datacla
  Downloading mypy_extensions-1.0.0-py3-none-any.whl (4.7 kB)
Installing collected packages: mypy-extensions, marshmallow, jsonpointer,
Successfully installed dataclasses-json-0.6.3 jsonpatch-1.33 jsonpointer-
Collecting openai
  Downloading openai-1.3.7-py3-none-any.whl (221 kB)
    221.4/221.4 kB 4.6 MB/s eta
Requirement already satisfied: anyio<4,>=3.5.0 in /usr/local/lib/python3.
Requirement already satisfied: distro<2,>=1.7.0 in /usr/lib/python3/dist-
Collecting httpx<1,>=0.23.0 (from openai)
  Downloading httpx-0.25.2-py3-none-any.whl (74 kB)
    75.0/75.0 kB 9.0 MB/s eta 0
Requirement already satisfied: pydantic<3,>=1.9.0 in /usr/local/lib/pytho
Requirement already satisfied: sniffio in /usr/local/lib/python3.10/dist-
Requirement already satisfied: tqdm>4 in /usr/local/lib/python3.10/dist-p
Requirement already satisfied: typing-extensions<5,>=4.5 in /usr/local/li
Requirement already satisfied: idna>=2.8 in /usr/local/lib/python3.10/dis
Requirement already satisfied: exceptiongroup in /usr/local/lib/python3.1
Requirement already satisfied: certifi in /usr/local/lib/python3.10/dist-
Collecting httpcore==1.* (from httpx<1,>=0.23.0->openai)
  Downloading httpcore-1.0.2-py3-none-any.whl (76 kB)
```

```

Collecting h11<0.15,>=0.13 (from httpcore==1.*->httpx<1,>=0.23.0->openai)
  Downloading h11-0.14.0-py3-none-any.whl (58 kB)
76.9/76.9 kB 7.1 MB/s eta 0
Installing collected packages: h11, httpcore, httpx, openai
ERROR: pip's dependency resolver does not currently take into account all
llmx 0.0.15a0 requires cohere, which is not installed.
llmx 0.0.15a0 requires tiktoken, which is not installed.
Successfully installed h11-0.14.0 httpcore-1.0.2 httpx-0.25.2 openai-1.3.
Collecting PyPDF2
  Downloading pypdf2-3.0.1-py3-none-any.whl (232 kB)
58.3/58.3 kB 5.8 MB/s eta 0
Installing collected packages: PyPDF2
Successfully installed PyPDF2-3.0.1
Collecting faiss-cpu
  Downloading faiss_cpu-1.7.4-cp310-cp310-manylinux_2_17_x86_64.manylinux
17.6/17.6 MB 33.5 MB/s eta
Installing collected packages: faiss-cpu
Successfully installed faiss-cpu-1.7.4
Collecting tiktoken
  Downloading tiktoken-0.5.1-cp310-cp310-manylinux_2_17_x86_64.manylinux2
2.0/2.0 MB 22.1 MB/s eta 0:
Requirement already satisfied: regex>=2022.1.18 in /usr/local/lib/python3
Requirement already satisfied: requests>=2.26.0 in /usr/local/lib/python3

```

```

from PyPDF2 import PdfReader
from langchain.embeddings.openai import OpenAIEmbeddings
from langchain.text_splitter import CharacterTextSplitter
from langchain.vectorstores import FAISS

```

Double-click (or enter) to edit

```

import os
os.environ["OPENAI_API_KEY"] = ""
os.environ["SERPAPI_API_KEY"] = ""

```

```

# provide the path of pdf file/files.
pdfreader = PdfReader('budget_speech.pdf')

```

```

from typing_extensions import Concatenate
# read text from pdf
raw_text = ''
for i, page in enumerate(pdfreader.pages):
    content = page.extract_text()
    if content:
        raw_text += content

```

```
raw_text
```

```

'GOVERNMENT OF INDIA\nBUDGET 2023-2024\nSPEECH\nOF\nNIRMALA SITHARAMAN\nMI
NISTER OF FINANCE\nFebruary 1, 2023CONTENTS \nPART-A \n Page No. \n\uf0b
7 Introduction 1 \n\uf0b7 Achievements since 2014: Leaving no one behind 2
\n\uf0b7 Vision for Amrit Kaal - an empowered and inclusive economy 3 \n\
uf0b7 Priorities of this Budget 5 \ni. Inclusive Development \nii. Reachi
ng the Last Mile \niii. Infrastructure and Investment \niv. Unleashing the
Potential \nv. Green Growth \nvi. Youth Power \nvii. Financial Sector \n

```

```

# We need to split the text using Character Text Split such that it sshou
text_splitter = CharacterTextSplitter(
    separator = "\n",
    chunk_size = 800,
    chunk_overlap = 200,
    length_function = len,
)
texts = text_splitter.split_text(raw_text)

```

```
len(texts)
```

```
149
```

```

# Download embeddings from OpenAI
embeddings = OpenAIEmbeddings()

```

```
document_search = FAISS.from_texts(texts, embeddings)
```

```
document_search
```

```
<langchain.vectorstores.faiss.FAISS at 0x7f7abd1445b0>
```

```
from langchain.chains.question_answering import load_qa_chain
from langchain.llms import OpenAI
```

```
chain = load_qa_chain(OpenAI(), chain_type="stuff")
```

```
query = "Vision for Amrit Kaal"
docs = document_search.similarity_search(query)
chain.run(input_documents=docs, question=query)
```

```
' Our vision for the Amrit Kaal includes technology-driven and knowledge-based economy with strong public finances, and a robust financial sector. To achieve this, Jan Bhagidari through Sabka Saath Sabka Prayas is essential. The economic agenda for achieving this vision focuses on three things: first, facilitating ample opportunities for citizens, especially the youth
```

```
query = "How much the agriculture target will be increased to and what the docs = document_search.similarity_search(query)
chain.run(input_documents=docs, question=query)
```

```
' The agriculture credit target will be increased to ` 20 lakh crore with focus on animal husbandry, dairy and fisheries '
```

```
from langchain.document_loaders import OnlinePDFLoader
```

```
loader = OnlinePDFLoader("https://arxiv.org/pdf/1706.03762.pdf")
```

```
!pip install unstructured
```

```
Downloading httpx-0.23.3-py3-none-any.whl (71 kB)
71.5/71.5 kB 10.0 MB/s eta
Collecting deprecated~=1.2.0 (from argilla->unstructured)
Downloading Deprecated-1.2.14-py2.py3-none-any.whl (9.6 kB)
Requirement already satisfied: packaging>=20.0 in /usr/local/lib/python3.
Requirement already satisfied: pydantic>=1.10.7 in /usr/local/lib/python3
Requirement already satisfied: wrapt<1.15,>=1.13 in /usr/local/lib/python
Requirement already satisfied: numpy<1.24.0 in /usr/local/lib/python3.10/
Requirement already satisfied: tqdm>=4.27.0 in /usr/local/lib/python3.10/
Collecting backoff (from argilla->unstructured)
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Collecting monotonic (from argilla->unstructured)
Downloading monotonic-1.6-py2.py3-none-any.whl (8.2 kB)
Collecting rich<=13.0.1 (from argilla->unstructured)
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238.1/238.1 kB 25.7 MB/s eta
Requirement already satisfied: typer<1.0.0,>=0.6.0 in /usr/local/lib/pyth
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Requirement already satisfied: python-dateutil>=2.8.1 in /usr/local/lib/p
Requirement already satisfied: pytz>=2020.1 in /usr/local/lib/python3.10/
Collecting olefile>=0.46 (from msg-parser->unstructured)
  Downloading olefile-0.46.zip (112 kB)
    112.2/112.2 kB 12.6 MB/s eta
  Preparing metadata (setup.py) ... done
Requirement already satisfied: click in /usr/local/lib/python3.10/dist-pa
Requirement already satisfied: joblib in /usr/local/lib/python3.10/dist-p
Requirement already satisfied: regex>=2021.8.3 in /usr/local/lib/python3.
Requirement already satisfied: et-xmlfile in /usr/local/lib/python3.10/di
Requirement already satisfied: charset-normalizer>=2.0.0 in /usr/local/li
Requirement already satisfied: cryptography>=36.0.0 in /usr/local/lib/pyt
Collecting XlsxWriter>=0.5.7 (from python-pptx->unstructured)
  Downloading XlsxWriter-3.1.2-py3-none-any.whl (153 kB)
    153.0/153.0 kB 16.7 MB/s eta
Requirement already satisfied: urllib3<1.27,>=1.21.1 in /usr/local/lib/py
Requirement already satisfied: certifi>=2017.4.17 in /usr/local/lib/pytho
Requirement already satisfied: idna<4,>=2.5 in /usr/local/lib/python3.10/
Requirement already satisfied: cffi>=1.12 in /usr/local/lib/python3.10/di
Collecting httpcore<0.17.0,>=0.15.0 (from httpx<0.24,>=0.15->argilla->uns
  Downloading httpcore-0.16.3-py3-none-any.whl (69 kB)
    69.6/69.6 kB 6.8 MB/s eta 0
Collecting rfc3986[idna2008]<2,>=1.3 (from httpx<0.24,>=0.15->argilla->un
  Downloading rfc3986-1.5.0-py2.py3-none-any.whl (31 kB)
Requirement already satisfied: sniffio in /usr/local/lib/python3.10/dist-
Requirement already satisfied: typing-extensions>=4.2.0 in /usr/local/lib
Requirement already satisfied: six>=1.5 in /usr/local/lib/python3.10/dist
Collecting commonmark<0.10.0,>=0.9.0 (from rich<=13.0.1->argilla->unstruc
  Downloading commonmark-0.9.1-py2.py3-none-any.whl (51 kB)
    51.1/51.1 kB 6.3 MB/s eta 0
Requirement already satisfied: pygments<3.0.0,>=2.6.0 in /usr/local/lib/p
Requirement already satisfied: pycparser in /usr/local/lib/python3.10/dis
Collecting h11<0.15,>=0.13 (from httpcore<0.17.0,>=0.15.0->httpx<0.24,>=0
  Downloading h11-0.14.0-py3-none-any.whl (58 kB)
    58.3/58.3 kB 7.1 MB/s eta 0
Requirement already satisfied: anyio<5.0,>=3.0 in /usr/local/lib/python3.
Building wheels for collected packages: python-docx, python-pptx, olefile
  Building wheel for python-docx (setup.py) ... done
  Created wheel for python-docx: filename=python_docx-0.8.11-py3-none-any
  Stored in directory: /root/.cache/pip/wheels/80/27/06/837436d4c3bd989b9
  Building wheel for python-pptx (setup.py) ... done
  Created wheel for nvthon-nntx: filename=nvthon nntx-0.6.21-nv3-none-anv

```

```
data = loader.load()
```

```
data
```

```
[7], reduces results known for quasi-smooth hypersurfaces to quasi-
smooth intersection subvarieties. The idea in this paper goes the other
```

way around, we translate some results for quasi-smooth intersection subvarieties to quasi-smooth hypersurfaces, mainly the (1, 1)-Lefschetz theorem.

**Acknowledgement.** I thank Prof. Ugo Bruzzo and Tiago Fonseca for useful discussions. I also acknowledge support from FAPESP postdoctoral grant No. 2019/23499-7.

## Preliminaries and Notation

### 2.1 Toric varieties

Let  $M$  be a free abelian group of rank  $d$ , let  $N = \text{Hom}(M, \mathbb{Z})$ , and  $NR = N \otimes_{\mathbb{Z}} \mathbb{R}$ . A convex subset  $\sigma \subset NR$  is a rational  $k$ -dimensional simplicial cone if there exist  $k$  linearly independent primitive elements  $e_1, \dots, e_k \in N$  such that  $\sigma = \{\mu_1 e_1 + \dots + \mu_k e_k\}$ .

**Definition 2.1.** The generators  $e_i$  are integral if for every  $i$  and any nonnegative rational number  $\mu$  the product  $\mu e_i$  is in  $N$  only if  $\mu$  is an integer.

Given two rational simplicial cones  $\sigma, \sigma'$  one says that  $\sigma'$  is a face of  $\sigma$  ( $\sigma' < \sigma$ ) if the set of integral generators of  $\sigma'$  is a subset of the set of integral generators of  $\sigma$ .

A finite set  $\Sigma = \{\sigma_1, \dots, \sigma_t\}$  of rational simplicial cones is called a rational simplicial complete  $d$ -dimensional fan if:

- all faces of cones in  $\Sigma$  are in  $\Sigma$ ;
- if  $\sigma, \sigma' \in \Sigma$  then  $\sigma \cap \sigma' < \sigma$  and  $\sigma \cap \sigma' < \sigma'$ ;
- $NR = \sigma_1 \cup \dots \cup \sigma_t$ .

A rational simplicial complete  $d$ -dimensional fan  $\Sigma$  defines a  $d$ -dimensional toric variety  $\Sigma$  having only orbifold singularities which we assume to be projective. Moreover,  $T := \text{Pd } N \otimes_{\mathbb{Z}} \mathbb{C}_* \simeq (\mathbb{C}_*)^d$  is the torus action on  $\text{Pd } \Sigma$ . We denote by  $\Sigma(i)$  the  $i$ -dimensional cones of  $\Sigma$  and each  $\rho \in \Sigma$  corresponds to an irreducible  $T$ -invariant Weil divisor  $D_\rho$  on  $\text{Pd } \text{Cl}(\Sigma)$  be the group of Weil divisors on  $\text{Pd } \Sigma$ . Let  $\Sigma$  module rational equivalences.

The total coordinate ring of  $\text{Pd } \Sigma$  is the polynomial ring  $S = \mathbb{C}[x_\rho \mid \rho \in \Sigma(1)]$ ,  $S$  has the  $\rho \in \text{Cl}(\Sigma)$ -grading, a Weil divisor  $D = \sum_{\rho \in \Sigma(1)} u_\rho D_\rho$  determines the monomial  $x_u := \prod_{\rho \in \Sigma(1)} x_\rho^{u_\rho} \in S$  and conversely  $\deg(x_u) = [D] \in \text{Cl}(\Sigma)$ .

For a cone  $\sigma \in \Sigma$ ,  $\hat{\sigma}$  is the set of 1-dimensional cone in  $\Sigma$  that are not contained in  $\sigma$  and  $x^{\hat{\sigma}} := \prod_{\rho \in \hat{\sigma}} x_\rho$  is the associated monomial in  $S$ .

$\Sigma$  is the monomial ideal  $B\Sigma := \langle x^{\hat{\sigma}} \mid \sigma \in \Sigma \rangle$  and

**Definition 2.2.** The irrelevant ideal of  $\text{Pd } \Sigma$  the zero locus  $Z(\Sigma) := V(B\Sigma)$  in the affine space  $\text{Ad} := \text{Spec}(S)$  is the irrelevant locus.

**Proposition 2.3** (Theorem 5.1.11 [5]). The toric variety  $\text{Pd } \Sigma$  is a categorical quotient  $\text{Ad} \setminus Z(\Sigma)$  by the group  $\text{Hom}(\text{Cl}(\Sigma), \mathbb{C}_*)$  and the group action is induced by the  $\text{Cl}(\Sigma)$ -grading of  $S$ .

### 2.2 Orbifolds

Now we give a brief introduction to complex orbifolds and we mention the needed theorems for the next section. Namely: de Rham theorem and Dolbeault theorem for complex orbifolds.

**Definition 2.4.** A complex orbifold of complex dimension  $d$  is a singular complex space whose singularities are locally isomorphic to quotient singularities  $\mathbb{C}^d/G$ , for finite subgroups  $G \subset \text{GL}(d, \mathbb{C})$ .

**Definition 2.5.** A differential form on a complex orbifold  $Z$  is defined locally at  $z \in Z$  as a  $G$ -invariant differential form on  $\mathbb{C}^d$  where  $G \subset \text{GL}(d, \mathbb{C})$  and  $Z$  is locally isomorphic to  $\mathbb{C}^d/G$  around  $z$ .

Roughly speaking the local geometry of orbifolds reduces to local  $G$ -invariant geometry. We have a complex of differential forms  $(A^\bullet(Z), d)$  and a double complex  $(A^{\bullet, \bullet}(Z), \partial, \bar{\partial})$  of bigraded differential forms which define the de Rham and the Dolbeault cohomology groups (for a fixed  $p \in \mathbb{N}$ ) respectively:

$$H^p_{\text{dR}}(Z) := H^p(\text{ker } d \text{ im } \bar{\partial}) \text{ and } H^{p, q}(Z, \bar{\partial}) := H^{p, q}(\text{ker } \bar{\partial} \text{ im } d)$$

and  $H^p(Z, \mathbb{C}) := H^p(\text{ker } d \text{ im } \bar{\partial})$ .

**Theorem 2.6** (Theorem 3.4.4 in [4] and Theorem 1.2 in [1]). Let  $Z$  be a compact

complex orbifold. There are natural isomorphisms:  $H^{\bullet}(Z, C) \simeq H^{\bullet}(Z, C) \otimes H^{\bullet}(Z, \mathbb{R}) \simeq H^{\bullet}(X, \Omega^{\bullet}(Z))$ .  
 Lefschetz theorem for projective toric orbifolds  
 Definition 3.1. A subvariety  $X \subset \mathbb{P}^d(\Sigma)$ .  $\Sigma$  is quasi-smooth if  $V(IX) \subset \mathbb{A}^{\Sigma}(1)$  is smooth outside  
 Example 3.2. Quasi-smooth hypersurfaces or more generally quasi-smooth intersection sub-varieties are quasi-smooth subvarieties (see [2] or [7] for more details).  
 Remark 3.3. Quasi-smooth subvarieties are suborbifolds of  $\mathbb{P}^d(\Sigma)$  in the sense of

```
# Download embeddings from OpenAI
embeddings = OpenAIEmbeddings()
```

```
!pip install chromadb
```

```
Looking in indexes: https://pypi.org/simple, https://us-python.pkg.dev/colab-tool/pypi/
Collecting chromadb
  Downloading chromadb-0.3.26-py3-none-any.whl (123 kB)
    123.6/123.6 kB 4.3 MB/s eta 0:00:00
Requirement already satisfied: pandas>=1.3 in /usr/local/lib/python3.10/dist-packages (from chromadb)
Collecting requests>=2.28 (from chromadb)
  Downloading requests-2.31.0-py3-none-any.whl (62 kB)
    62.6/62.6 kB 7.3 MB/s eta 0:00:00
Requirement already satisfied: pydantic>=1.9 in /usr/local/lib/python3.10/dist-packages (from chromadb)
Collecting hnswlib>=0.7 (from chromadb)
  Downloading hnswlib-0.7.0.tar.gz (33 kB)
  Installing build dependencies ... done
  Getting requirements to build wheel ... done
  Preparing metadata (pyproject.toml) ... done
Collecting clickhouse-connect>=0.5.7 (from chromadb)
  Downloading clickhouse_connect-0.6.2-cp310-cp310-manylinux_2_17_x86_64.manylinux1_x86_64.whl (965.1 kB)
    965.1/965.1 kB 25.4 MB/s eta 0:00:00
Requirement already satisfied: duckdb>=0.7.1 in /usr/local/lib/python3.10/dist-packages (from chromadb)
Collecting fastapi>=0.85.1 (from chromadb)
  Downloading fastapi-0.97.0-py3-none-any.whl (56 kB)
    57.0/57.0 kB 7.0 MB/s eta 0:00:00
Collecting uvicorn[standard]>=0.18.3 (from chromadb)
  Downloading uvicorn-0.22.0-py3-none-any.whl (58 kB)
    58.3/58.3 kB 6.9 MB/s eta 0:00:00
Requirement already satisfied: numpy>=1.21.6 in /usr/local/lib/python3.10/dist-packages (from chromadb)
Collecting posthog>=2.4.0 (from chromadb)
  Downloading posthog-3.0.1-py2.py3-none-any.whl (37 kB)
Requirement already satisfied: typing-extensions>=4.5.0 in /usr/local/lib/python3.10/dist-packages (from chromadb)
Collecting pulsar-client>=3.1.0 (from chromadb)
  Downloading pulsar_client-3.2.0-cp310-cp310-manylinux_2_17_x86_64.manylinux1_x86_64.whl (5.3 MB)
    5.3/5.3 MB 76.3 MB/s eta 0:00:00
Collecting onnxruntime>=1.14.1 (from chromadb)
  Downloading onnxruntime-1.15.0-cp310-cp310-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (5.9 MB)
    5.9/5.9 MB 75.8 MB/s eta 0:00:00
Collecting tokenizers>=0.13.2 (from chromadb)
```



```

Downloading tokenizers-0.13.3-cp310-cp310-manylinux_2_17_x86_64.manylin
7.8/7.8 MB 59.6 MB/s eta 0:
Requirement already satisfied: tqdm>=4.65.0 in /usr/local/lib/python3.10/
Collecting overrides>=7.3.1 (from chromadb)
  Downloading overrides-7.3.1-py3-none-any.whl (17 kB)
Requirement already satisfied: certifi in /usr/local/lib/python3.10/dist-
Requirement already satisfied: urllib3>=1.26 in /usr/local/lib/python3.10
Requirement already satisfied: pytz in /usr/local/lib/python3.10/dist-pac
Collecting zstandard (from clickhouse-connect>=0.5.7->chromadb)
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2.7/2.7 MB 80.4 MB/s eta 0:
Collecting lz4 (from clickhouse-connect>=0.5.7->chromadb)
  Downloading lz4-4.3.2-cp310-cp310-manylinux_2_17_x86_64.manylinux2014_x
1.3/1.3 MB 71.6 MB/s eta 0:
Collecting starlette<0.28.0,>=0.27.0 (from fastapi>=0.85.1->chromadb)
  Downloading starlette-0.27.0-py3-none-any.whl (66 kB)
67.0/67.0 kB 8.2 MB/s eta 0
Collecting coloredlogs (from onnxruntime>=1.14.1->chromadb)
  Downloading coloredlogs-15.0.1-py2.py3-none-any.whl (46 kB)
46.0/46.0 kB 5.7 MB/s eta 0
Requirement already satisfied: flatbuffers in /usr/local/lib/python3.10/d
Requirement already satisfied: packaging in /usr/local/lib/python3.10/dis
Requirement already satisfied: protobuf in /usr/local/lib/python3.10/dist
Requirement already satisfied: sympy in /usr/local/lib/python3.10/dist-pa
Requirement already satisfied: python-dateutil>=2.8.1 in /usr/local/lib/p
Requirement already satisfied: six>=1.5 in /usr/local/lib/python3.10/dist
Requirement already satisfied: monotonic>=1.5 in /usr/local/lib/python3.1
Requirement already satisfied: backoff>=1.10.0 in /usr/local/lib/python3.
Requirement already satisfied: charset-normalizer<4,>=2 in /usr/local/lib
Requirement already satisfied: idna<4,>=2.5 in /usr/local/lib/python3.10/
Requirement already satisfied: click>=7.0 in /usr/local/lib/python3.10/di
Requirement already satisfied: h11>=0.8 in /usr/local/lib/python3.10/dist
Collecting httptools>=0.5.0 (from uvicorn[standard]>=0.18.3->chromadb)
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414.1/414.1 kB 38.0 MB/s eta
Collecting python-dotenv>=0.13 (from uvicorn[standard]>=0.18.3->chromadb)
  Downloading python_dotenv-1.0.0-py3-none-any.whl (19 kB)
Requirement already satisfied: pyyaml>=5.1 in /usr/local/lib/python3.10/d
Collecting uvloop!=0.15.0,!0.15.1,>=0.14.0 (from uvicorn[standard]>=0.18
  Downloading uvloop-0.17.0-cp310-cp310-manylinux_2_17_x86_64.manylinux20
4.1/4.1 MB 99.5 MB/s eta 0:
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1.3/1.3 MB 57.7 MB/s eta 0:
Collecting websockets>=10.4 (from uvicorn[standard]>=0.18.3->chromadb)
  Downloading websockets-11.0.3-cp310-cp310-manylinux_2_5_x86_64.manylinu
129.9/129.9 kB 15.8 MB/s eta
Requirement already satisfied: anyio<5,>=3.4.0 in /usr/local/lib/python3.
Collecting humanfriendly>=9.1 (from coloredlogs->onnxruntime>=1.14.1->chr
  Downloading humanfriendly-10.0-py2.py3-none-any.whl (86 kB)
86.8/86.8 kB 10.0 MB/s eta

```



```
Requirement already satisfied: mpmath>=0.19 in /usr/local/lib/python3.10/
Requirement already satisfied: sniffio>=1.1 in /usr/local/lib/python3.10/
Building wheels for collected packages: hnswlib
  Building wheel for hnswlib (pyproject.toml) ... done
  Created wheel for hnswlib: filename=hnswlib-0.7.0-cp310-cp310-linux_x86
  Stored in directory: /root/.cache/pip/wheels/8a/ae/ec/235a682e0041fbaee
Successfully built hnswlib
Installing collected packages: tokenizers, zstandard, websockets, uvloop,
  Attempting uninstall: requests
    Found existing installation: requests 2.27.1
    Uninstalling requests-2.27.1:
      Successfully uninstalled requests-2.27.1
ERROR: pip's dependency resolver does not currently take into account all
```

```
from langchain.indexes import VectorstoreIndexCreator
index = VectorstoreIndexCreator().from_loaders([loader])
```

```
query = "Explain me about Attention is all you need"
index.query(query)
```

```
' Attention is All You Need is a paper published in 2017 by researchers fr
om Google Brain. The paper introduces the Transformer, a model architectur
e that relies entirely on an attention mechanism to draw global dependenci
es between input and output, instead of using recurrence. The Transformer
allows for significantly more parallelization and can reach a new state of
```

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