

```
!pip install sentence-transformers faiss-cpu PyPDF2 transformers torch
```

```
Requirement already satisfied: sentence-transformers in /usr/local/lib/python3.12/dist-packages (5.1.1)
Collecting faiss-cpu
  Downloading faiss_cpu-1.12.0-cp312-cp312-manylinux_2_27_x86_64.manylinux_2_28_x86_64.whl.metadata (5.1 kB)
Collecting PyPDF2
  Downloading pypdf2-3.0.1-py3-none-any.whl.metadata (6.8 kB)
Requirement already satisfied: transformers in /usr/local/lib/python3.12/dist-packages (4.57.0)
Requirement already satisfied: torch in /usr/local/lib/python3.12/dist-packages (2.8.0+cu126)
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Requirement already satisfied: scikit-learn in /usr/local/lib/python3.12/dist-packages (from sentence-transformers) (1.6.1)
Requirement already satisfied: scipy in /usr/local/lib/python3.12/dist-packages (from sentence-transformers) (1.16.2)
Requirement already satisfied: huggingface-hub>=0.20.0 in /usr/local/lib/python3.12/dist-packages (from sentence-transformers) (0.35.3)
Requirement already satisfied: Pillow in /usr/local/lib/python3.12/dist-packages (from sentence-transformers) (11.3.0)
Requirement already satisfied: typing_extensions>=4.5.0 in /usr/local/lib/python3.12/dist-packages (from sentence-transformers) (4.15.0)
Requirement already satisfied: numpy<3.0,>=1.25.0 in /usr/local/lib/python3.12/dist-packages (from faiss-cpu) (2.0.2)
Requirement already satisfied: packaging in /usr/local/lib/python3.12/dist-packages (from faiss-cpu) (25.0)
Requirement already satisfied: filelock in /usr/local/lib/python3.12/dist-packages (from transformers) (3.20.0)
Requirement already satisfied: pyyaml>=5.1 in /usr/local/lib/python3.12/dist-packages (from transformers) (6.0.3)
Requirement already satisfied: regex!=2019.12.17 in /usr/local/lib/python3.12/dist-packages (from transformers) (2024.11.6)
Requirement already satisfied: requests in /usr/local/lib/python3.12/dist-packages (from transformers) (2.32.4)
Requirement already satisfied: tokenizers<=0.23.0,>=0.22.0 in /usr/local/lib/python3.12/dist-packages (from transformers) (0.22.1)
Requirement already satisfied: safetensors>=0.4.3 in /usr/local/lib/python3.12/dist-packages (from transformers) (0.6.2)
Requirement already satisfied: setuptools in /usr/local/lib/python3.12/dist-packages (from torch) (75.2.0)
Requirement already satisfied: sympy>=1.13.3 in /usr/local/lib/python3.12/dist-packages (from torch) (1.13.3)
Requirement already satisfied: networkx in /usr/local/lib/python3.12/dist-packages (from torch) (3.5)
Requirement already satisfied: jinja2 in /usr/local/lib/python3.12/dist-packages (from torch) (3.1.6)
Requirement already satisfied: fsspec in /usr/local/lib/python3.12/dist-packages (from torch) (2025.3.0)
Requirement already satisfied: nvidia-cuda-nvrtc-cu12==12.6.77 in /usr/local/lib/python3.12/dist-packages (from torch) (12.6.77)
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Requirement already satisfied: nvidia-cusparse-cu12==12.5.4.2 in /usr/local/lib/python3.12/dist-packages (from torch) (12.5.4.2)
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Requirement already satisfied: nvidia-nvtx-cu12==12.6.77 in /usr/local/lib/python3.12/dist-packages (from torch) (12.6.77)
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Requirement already satisfied: hf-xet<2.0.0,>=1.1.3 in /usr/local/lib/python3.12/dist-packages (from huggingface-hub>=0.20.0->sentence-t)
Requirement already satisfied: mpmath<1.4,>=1.1.0 in /usr/local/lib/python3.12/dist-packages (from sympy>=1.13.3->torch) (1.3.0)
Requirement already satisfied: MarkupSafe>=2.0 in /usr/local/lib/python3.12/dist-packages (from jinja2->torch) (3.0.3)
Requirement already satisfied: charset_normalizer<4,>=2 in /usr/local/lib/python3.12/dist-packages (from requests->transformers) (3.4.3)
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Requirement already satisfied: idna<4,>=2.5 in /usr/local/lib/python3.12/dist-packages (from requests->transformers) (3.10)  
Requirement already satisfied: urllib3<3,>=1.21.1 in /usr/local/lib/python3.12/dist-packages (from requests->transformers) (2.5.0)  
Requirement already satisfied: certifi>=2017.4.17 in /usr/local/lib/python3.12/dist-packages (from requests->transformers) (2025.10.5)  
Requirement already satisfied: joblib>=1.2.0 in /usr/local/lib/python3.12/dist-packages (from scikit-learn->sentence-transformers) (1.5.2)  
Requirement already satisfied: threadpoolctl>=3.1.0 in /usr/local/lib/python3.12/dist-packages (from scikit-learn->sentence-transformers) (3.6.0)  
Downloading faiss\_cpu-1.12.0-cp312-cp312-manylinux\_2\_27\_x86\_64.manylinux\_2\_28\_x86\_64.whl (31.4 MB)  
31.4/31.4 MB 38.7 MB/s eta 0:00:00  
Downloading pypdf2-3.0.1-py3-none-any.whl (232 kB)  
232.6/232.6 kB 19.6 MB/s eta 0:00:00  
Installing collected packages: PyPDF2, faiss-cpu  
Successfully installed PyPDF2-3.0.1 faiss-cpu-1.12.0

```
from google.colab import files
```

```
uploaded = files.upload() # Select PDFs from your PC
for filename in uploaded.keys():
    print('Uploaded file:', filename)
```

No file chosen      Upload widget is only available when the cell has been executed in the current browser session. Please rerun this cell to enable.  
Saving resume\_k.\_kundana (1).pdf to resume\_k.\_kundana (1).pdf

```
import os
from PyPDF2 import PdfReader

doc_folder = './' # Change to your folder if using Drive
documents = []

for file in os.listdir(doc_folder):
    if file.endswith(".pdf"):
        reader = PdfReader(os.path.join(doc_folder, file))
        text = ""
        for page in reader.pages:
            page_text = page.extract_text()
            if page_text:
                text += page_text + " "
        documents.append(text)

print(f"Loaded {len(documents)} documents")
```

Loaded 1 documents

```
def chunk_text(text, chunk_size=500, overlap=50):
    words = text.split()
    chunks = []
    for i in range(0, len(words), chunk_size - overlap):
        chunk = " ".join(words[i:i + chunk_size])
        chunks.append(chunk)
    return chunks

all_chunks = []
for doc in documents:
    all_chunks.extend(chunk_text(doc))

print(f"Total chunks: {len(all_chunks)}")
```

Total chunks: 1

```
from sentence_transformers import SentenceTransformer

model = SentenceTransformer('all-MiniLM-L6-v2')
embeddings = model.encode(all_chunks, show_progress_bar=True)
```

```
/usr/local/lib/python3.12/dist-packages/huggingface_hub/utils/_auth.py:94: UserWarning:
The secret `HF_TOKEN` does not exist in your Colab secrets.
To authenticate with the Hugging Face Hub, create a token in your settings tab (https://huggingface.co/settings/tokens), set it as secret
You will be able to reuse this secret in all of your notebooks.
Please note that authentication is recommended but still optional to access public models or datasets.
```

```
warnings.warn(
modules.json: 100% 349/349 [00:00<00:00, 17.4kB/s]
config_sentence_transformers.json: 100% 116/116 [00:00<00:00, 7.96kB/s]
README.md: 10.5k/? [00:00<00:00, 569kB/s]
sentence_bert_config.json: 100% 53.0/53.0 [00:00<00:00, 2.72kB/s]
config.json: 100% 612/612 [00:00<00:00, 40.1kB/s]
model.safetensors: 100% 90.9M/90.9M [00:01<00:00, 75.4MB/s]
tokenizer_config.json: 100% 350/350 [00:00<00:00, 16.5kB/s]
vocab.txt: 232k/? [00:00<00:00, 6.23MB/s]
tokenizer.json: 466k/? [00:00<00:00, 5.74MB/s]
special_tokens_map.json: 100% 112/112 [00:00<00:00, 1.88kB/s]
config.json: 100% 190/190 [00:00<00:00, 4.63kB/s]
Batches: 100% 1/1 [00:00<00:00, 2.12it/s]
```

```
import faiss
import numpy as np

dimension = embeddings.shape[1]
index = faiss.IndexFlatL2(dimension)
index.add(np.array(embeddings))

print(f"FAISS index has {index.ntotal} vectors")
```

```
FAISS index has 1 vectors
```

```
def search(query, k=5):
    query_vec = model.encode([query])
    distances, indices = index.search(np.array(query_vec), k)
    return [all_chunks[i] for i in indices[0]]
```

```
# Example:
query = "What are the symptoms of plant disease X?"
results = search(query)
for i, chunk in enumerate(results):
    print(f"Chunk {i+1}: {chunk[:200]}...") # Show first 200 chars
```

```
Chunk 1: K. Kundana Responsive Designs & ML Projects 9391454194 ◇kundanasri2004@gmail.com ◇LinkedIn ◇GitHub SUMMARY Developed multiple
Chunk 2: K. Kundana Responsive Designs & ML Projects 9391454194 ◇kundanasri2004@gmail.com ◇LinkedIn ◇GitHub SUMMARY Developed multiple
Chunk 3: K. Kundana Responsive Designs & ML Projects 9391454194 ◇kundanasri2004@gmail.com ◇LinkedIn ◇GitHub SUMMARY Developed multiple
Chunk 4: K. Kundana Responsive Designs & ML Projects 9391454194 ◇kundanasri2004@gmail.com ◇LinkedIn ◇GitHub SUMMARY Developed multiple
Chunk 5: K. Kundana Responsive Designs & ML Projects 9391454194 ◇kundanasri2004@gmail.com ◇LinkedIn ◇GitHub SUMMARY Developed multiple
```

```
from transformers import pipeline

qa_model = pipeline("text2text-generation", model="google/flan-t5-small")

context = " ".join(search(query))
prompt = f"Using these documents, answer the question: {query}\nContext: {context}\nAnswer:"
answer = qa_model(prompt, max_length=200)[0]['generated_text']
print("Answer:", answer)
```

```
config.json:      1.40k/? [00:00<00:00, 19.9kB/s]

model.safetensors: 100%                               308M/308M [00:08<00:00, 48.9MB/s]

generation_config.json: 100%                           147/147 [00:00<00:00, 1.69kB/s]

tokenizer_config.json:      2.54k/? [00:00<00:00, 89.1kB/s]

spiece.model: 100%                                       792k/792k [00:00<00:00, 951kB/s]

tokenizer.json:      2.42M/? [00:00<00:00, 7.73MB/s]

special_tokens_map.json:      2.20k/? [00:00<00:00, 29.9kB/s]
```

```
Device set to use cpu
Token indices sequence length is longer than the specified maximum sequence length for this model (3655 > 512). Running this sequence th
Both `max_new_tokens` (=256) and `max_length` (=200) seem to have been set. `max_new_tokens` will take precedence. Please refer to the doc
Answer: K. Kundana Responsive Designs & ML Projects 9391454194 kundanasri2004@gmail.com LinkedIn GitHub SUMMARY Developed multiple academi
```

Could not connect to the reCAPTCHA service. Please check your internet connection and reload to get a reCAPTCHA challenge.