

hr-chatbot-project

September 24, 2025

Install the required dependencies

1.langchain 2.chromadb 3.openai 4.gradio 5.pypdf

```
[1]: !pip install --quiet langchain chromadb openai gradio pypdf langchain-openai
```

Croma DB was not working with SQL lite 3.31 so installed latest 3.40 version

```
[2]: # Download SQLite source
!wget https://www.sqlite.org/2023/sqlite-autoconf-3410200.tar.gz

# Extract
!tar -xzf sqlite-autoconf-3410200.tar.gz

# Build and install locally in ~/sqlite3
!cd sqlite-autoconf-3410200 && ./configure --prefix=$HOME/sqlite3 && make &&
↪make install
```

```
--2025-09-24 19:27:40--  https://www.sqlite.org/2023/sqlite-
autoconf-3410200.tar.gz
Resolving www.sqlite.org (www.sqlite.org)... 194.195.208.62,
2600:3c02::f03c:95ff:fe07:695
Connecting to www.sqlite.org (www.sqlite.org)|194.195.208.62|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 3125545 (3.0M) [application/x-gzip]
Saving to: 'sqlite-autoconf-3410200.tar.gz.10'
```

```
sqlite-autoconf-341 100%[=====>]    2.98M  6.23MB/s    in 0.5s
```

```
2025-09-24 19:27:41 (6.23 MB/s) - 'sqlite-autoconf-3410200.tar.gz.10' saved
[3125545/3125545]
```

```
checking for a BSD-compatible install... /usr/bin/install -c
checking whether build environment is sane... yes
checking for a race-free mkdir -p... /usr/bin/mkdir -p
checking for gawk... no
checking for mawk... mawk
checking whether make sets $(MAKE)... yes
checking whether make supports nested variables... yes
```

```

checking whether make supports the include directive... yes (GNU style)
checking for gcc... gcc
checking whether the C compiler works... yes
checking for C compiler default output file name... a.out
checking for suffix of executables...
checking whether we are cross compiling... no
checking for suffix of object files... o
checking whether the compiler supports GNU C... yes
checking whether gcc accepts -g... yes
checking for gcc option to enable C11 features... none needed
checking whether gcc understands -c and -o together... yes
checking dependency style of gcc... gcc3
checking for special C compiler options needed for large files... no
checking for _FILE_OFFSET_BITS value needed for large files... no
checking for gcc... (cached) gcc
checking whether the compiler supports GNU C... (cached) yes
checking whether gcc accepts -g... (cached) yes
checking for gcc option to enable C11 features... (cached) none needed
checking whether gcc understands -c and -o together... (cached) yes
checking dependency style of gcc... (cached) gcc3
checking build system type... x86_64-pc-linux-gnu
checking host system type... x86_64-pc-linux-gnu
checking how to print strings... printf
checking for a sed that does not truncate output... /usr/bin/sed
checking for grep that handles long lines and -e... /usr/bin/grep
checking for egrep... /usr/bin/grep -E
checking for fgrep... /usr/bin/grep -F
checking for ld used by gcc... /usr/bin/ld
checking if the linker (/usr/bin/ld) is GNU ld... yes
checking for BSD- or MS-compatible name lister (nm)... /usr/bin/nm -B
checking the name lister (/usr/bin/nm -B) interface... BSD nm
checking whether ln -s works... yes
checking the maximum length of command line arguments... 1572864
checking how to convert x86_64-pc-linux-gnu file names to x86_64-pc-linux-gnu
format... func_convert_file_noop
checking how to convert x86_64-pc-linux-gnu file names to toolchain format...
func_convert_file_noop
checking for /usr/bin/ld option to reload object files... -r
checking for objdump... objdump
checking how to recognize dependent libraries... pass_all
checking for dlltool... no
checking how to associate runtime and link libraries... printf %s\n
checking for ar... ar
checking for archiver @FILE support... @
checking for strip... strip
checking for ranlib... ranlib
checking command to parse /usr/bin/nm -B output from gcc object... ok
checking for sysroot... no

```

```

checking for a working dd... /usr/bin/dd
checking how to truncate binary pipes... /usr/bin/dd bs=4096 count=1
checking for mt... no
checking if : is a manifest tool... no
checking for stdio.h... yes
checking for stdlib.h... yes
checking for string.h... yes
checking for inttypes.h... yes
checking for stdint.h... yes
checking for strings.h... yes
checking for sys/stat.h... yes
checking for sys/types.h... yes
checking for unistd.h... yes
checking for dlfcn.h... yes
checking for objdir... .libs
checking if gcc supports -fno-rtti -fno-exceptions... no
checking for gcc option to produce PIC... -fPIC -DPIC
checking if gcc PIC flag -fPIC -DPIC works... yes
checking if gcc static flag -static works... yes
checking if gcc supports -c -o file.o... yes
checking if gcc supports -c -o file.o... (cached) yes
checking whether the gcc linker (/usr/bin/ld -m elf_x86_64) supports shared
libraries... yes
checking whether -lc should be explicitly linked in... no
checking dynamic linker characteristics... GNU/Linux ld.so
checking how to hardcode library paths into programs... immediate
checking whether stripping libraries is possible... yes
checking if libtool supports shared libraries... yes
checking whether to build shared libraries... yes
checking whether to build static libraries... yes
checking for fdatasync... yes
checking for usleep... yes
checking for fullfsync... no
checking for localtime_r... yes
checking for gmtime_r... yes
checking for gcc options needed to detect all undeclared functions... none
needed
checking whether strerror_r is declared... yes
checking whether strerror_r returns char *... no
checking for editline/readline.h... no
checking for readline/readline.h... yes
checking for library containing tgetent... -ltermcap
checking for library containing readline... -lreadline
checking for library containing pthread_create... -lpthread
checking for library containing pthread_mutexattr_init... none required
checking for library containing dlopen... -ldl
checking for whether to support dynamic extensions... yes
checking SQL math functions... enabled

```

```

checking for library containing ceil... -lm
checking FTS4 extension... enabled
checking FTS3 extension... disabled
checking FTS5 extension... enabled
checking for library containing log... none required
checking RTREE extension... enabled
checking Session extension... disabled
checking Build type... release
checking for posix_fallocate... yes
checking for zlib.h... yes
checking for library containing deflate... -lz
checking for library containing system... none required
checking that generated files are newer than configure... done
configure: creating ./config.status
config.status: creating Makefile
config.status: creating sqlite3.pc
config.status: executing depfiles commands
config.status: executing libtool commands
make: Nothing to be done for 'all'.
make[1]: Entering directory '/voc/work/sqlite-autoconf-3410200'
  /usr/bin/mkdir -p '/voc/work/sqlite3/lib'
  /bin/bash ./libtool  --mode=install /usr/bin/install -c  libsqlite3.la
'/voc/work/sqlite3/lib'
libtool: install: /usr/bin/install -c .libs/libsqlite3.so.0.8.6
/voc/work/sqlite3/lib/libsqlite3.so.0.8.6
libtool: install: (cd /voc/work/sqlite3/lib && { ln -s -f libsqlite3.so.0.8.6
libsqlite3.so.0 || { rm -f libsqlite3.so.0 && ln -s libsqlite3.so.0.8.6
libsqlite3.so.0; }; })
libtool: install: (cd /voc/work/sqlite3/lib && { ln -s -f libsqlite3.so.0.8.6
libsqlite3.so || { rm -f libsqlite3.so && ln -s libsqlite3.so.0.8.6
libsqlite3.so; }; })
libtool: install: /usr/bin/install -c .libs/libsqlite3.lai
/voc/work/sqlite3/lib/libsqlite3.la
libtool: install: /usr/bin/install -c .libs/libsqlite3.a
/voc/work/sqlite3/lib/libsqlite3.a
libtool: install: chmod 644 /voc/work/sqlite3/lib/libsqlite3.a
libtool: install: ranlib /voc/work/sqlite3/lib/libsqlite3.a
libtool: warning: remember to run 'libtool --finish
/voc/work/sqlite3/lib'
  /usr/bin/mkdir -p '/voc/work/sqlite3/bin'
  /bin/bash ./libtool  --mode=install /usr/bin/install -c sqlite3
'/voc/work/sqlite3/bin'
libtool: install: /usr/bin/install -c sqlite3 /voc/work/sqlite3/bin/sqlite3
  /usr/bin/mkdir -p '/voc/work/sqlite3/include'
  /usr/bin/install -c -m 644 sqlite3.h sqlite3ext.h '/voc/work/sqlite3/include'
  /usr/bin/mkdir -p '/voc/work/sqlite3/share/man/man1'
  /usr/bin/install -c -m 644 sqlite3.1 '/voc/work/sqlite3/share/man/man1'

```

```
/usr/bin/mkdir -p '/voc/work/sqlite3/lib/pkgconfig'
/usr/bin/install -c -m 644 sqlite3.pc '/voc/work/sqlite3/lib/pkgconfig'
make[1]: Leaving directory '/voc/work/sqlite-autoconf-3410200'
```

```
[3]: !pip install --quiet pysqlite3-binary
```

Import all necessary modules.

```
[4]: # Imports
import os
from langchain.document_loaders import PyPDFLoader
from langchain.text_splitter import CharacterTextSplitter
from langchain.vectorstores import Chroma
from langchain_openai import OpenAIEmbeddings
from langchain_openai import ChatOpenAI
from langchain.chains import RetrievalQA
from langchain.prompts import PromptTemplate
from langchain.chat_models import ChatOpenAI
from langchain.chains.combine_documents import create_stuff_documents_chain
from langchain.chains.retrieval import create_retrieval_chain
import gradio as gr
import sys
import types
import pysqlite3
sys.modules['sqlite3'] = pysqlite3
```

Set the open AI key

```
[5]: #from dotenv import load_dotenv, find_dotenv

#_ = load_dotenv(find_dotenv()) # read local .env file
#openai.api_key = os.getenv('OPENAI_API_KEY')
```

1.Loading the PDF file into document loader.2.Splitting the text in the document into chunks.

```
[6]: # Load Nestlé HR policy PDF
loader = PyPDFLoader("Nestle-Hr-Policy-Sample.pdf")
documents = loader.load()

# Split into chunks
text_splitter = CharacterTextSplitter(chunk_size=1000, chunk_overlap=200)
docs = text_splitter.split_documents(documents)
print(docs)
```

```
[Document(metadata={'producer': 'Microsoft: Print To PDF', 'creator': 'PyPDF',
'creationdate': '2025-09-24T19:41:23+05:30', 'author': '', 'moddate':
'2025-09-24T19:41:23+05:30', 'title': 'Microsoft Word - Document1', 'source':
'Nestle-Hr-Policy-Sample.pdf', 'total_pages': 3, 'page': 0, 'page_label': '1'},
```

page_content='Sample: Nestlé HR Policy (Mock Text) \n \n1. Introduction \nNestlé is committed to fostering a diverse and inclusive workplace that values integrity, respect, \nand high performance. This document outlines our core HR policies applicable to all employees \nacross regions, with variations subject to local labor laws. \n \n2. Work Hours and Attendance \n\uf0b7 Standard working hours are 40 hours per week, typically Monday to Friday, from 9:00 \nAM to 6:00 PM, including a 1-hour lunch break. \n\uf0b7 Employees are expected to report on time and notify their supervisor in case of any \nabsences or delays. \n \n3. Leave Policy \n\uf0b7 Annual Leave : Employees are entitled to 20 working days of paid annual leave per \ncalendar year. \n\uf0b7 Sick Leave : Sick leave of up to 10 days per year is available. A medical certificate is \nrequired for absences longer than 2 days. \n\uf0b7 Maternity Leave : Female employees are entitled to 18 weeks of paid maternity leave. \n\uf0b7 Paternity Leave : Male employees are eligible for 10 working days of paternity leave. \n\uf0b7 Compassionate Leave : Up to 5 days of paid leave is granted for the loss of an immediate \nfamily member. \n \n4. Code of Conduct \n\uf0b7 All employees must adhere to ethical conduct, treat colleagues with respect, and avoid \nany form of discrimination or harassment. \n\uf0b7 Violations may result in disciplinary actions, including verbal/written warnings, \nsuspension, or termination. \n \n5. Remote Work Policy'), Document(metadata={'producer': 'Microsoft: Print To PDF', 'creator': 'PyPDF', 'creationdate': '2025-09-24T19:41:23+05:30', 'author': '', 'moddate': '2025-09-24T19:41:23+05:30', 'title': 'Microsoft Word - Document1', 'source': 'Nestle-Hr-Policy-Sample.pdf', 'total_pages': 3, 'page': 1, 'page_label': '2'}), page_content='\uf0b7 Employees may request up to 2 days of remote work per week with managerial approval. \n\uf0b7 Remote work arrangements are subject to periodic review based on performance and \nteam needs. \n \n6. Training and Development \n\uf0b7 Nestlé encourages continuous learning through online courses, in-person training, and \ncareer development programs. \n\uf0b7 Employees are required to complete mandatory compliance training annually. \n \n7. Performance Reviews \n\uf0b7 Performance evaluations are conducted bi-annually to assess employee contributions and \nset goals. \n\uf0b7 Reviews impact eligibility for bonuses, promotions, and internal mobility. \n \n8. Grievance Redressal \n\uf0b7 Employees can raise concerns through their HR business partner or the Ethics & \nCompliance hotline. \n\uf0b7 All grievances are handled confidentially and investigated thoroughly. \n \n9. Termination and Notice Period \n\uf0b7 Employees are required to serve a 30-day notice period upon resignation unless otherwise \nagreed upon. \n\uf0b7 In cases of involuntary termination, Nestlé provides severance in accordance with local \nlabor laws. \n \n10. Data Privacy \n\uf0b7 Nestlé ensures the confidentiality and protection of all employee data in compliance with \ndata protection regulations (e.g., GDPR).'), Document(metadata={'producer': 'Microsoft: Print To PDF', 'creator': 'PyPDF', 'creationdate': '2025-09-24T19:41:23+05:30', 'author': '', 'moddate': '2025-09-24T19:41:23+05:30', 'title': 'Microsoft Word - Document1', 'source': 'Nestle-Hr-Policy-Sample.pdf', 'total_pages': 3, 'page': 2, 'page_label': '3'}), page_content='This policy is subject to revisions and should be read in conjunction with local labor laws and \ncompany-specific addenda.')]]

```
[7]: embedding = OpenAIEmbeddings()
vector_store = Chroma.from_documents(docs, embedding,
    ↪collection_name="nestle_hr_policy")
print("Chroma vector store created successfully.")
```

Chroma vector store created successfully.

```
[9]: # 1. Define prompt template with 'context' and 'question'
prompt_template = """
You are a helpful HR assistant for Nestlé. Use only the context below to answer
    ↪the question.
If the answer is not found in the context, say: "I'm sorry, I couldn't find
    ↪that information in the policy."

Context:
{context}

Question:
{input}

Helpful Answer:
"""

prompt = PromptTemplate.from_template(prompt_template)

# 2. Setup LLM and chains
chat_model = ChatOpenAI(model="gpt-3.5-turbo", temperature=0)
document_chain = create_stuff_documents_chain(llm=chat_model, prompt=prompt)
retriever = vector_store.as_retriever(search_kwargs={"k": 4})
qa_chain = create_retrieval_chain(retriever, document_chain)
```

```
[10]: !pip install --upgrade gradio
```

Defaulting to user installation because normal site-packages is not writeable
Requirement already satisfied: gradio in ./local/lib/python3.10/site-packages (5.47.0)
Requirement already satisfied: aiofiles<25.0,>=22.0 in /usr/local/lib/python3.10/site-packages (from gradio) (23.2.1)
Requirement already satisfied: anyio<5.0,>=3.0 in /usr/local/lib/python3.10/site-packages (from gradio) (3.7.1)
Requirement already satisfied: brotli>=1.1.0 in ./local/lib/python3.10/site-packages (from gradio) (1.1.0)
Requirement already satisfied: fastapi<1.0,>=0.115.2 in ./local/lib/python3.10/site-packages (from gradio) (0.117.1)
Requirement already satisfied: ffmpeg in /usr/local/lib/python3.10/site-packages (from gradio) (0.3.1)
Requirement already satisfied: gradio-client==1.13.2 in

././local/lib/python3.10/site-packages (from gradio) (1.13.2)
 Requirement already satisfied: groovy~=0.1 in ././local/lib/python3.10/site-packages (from gradio) (0.1.2)
 Requirement already satisfied: httpx<1.0,>=0.24.1 in /usr/local/lib/python3.10/site-packages (from gradio) (0.25.2)
 Requirement already satisfied: huggingface-hub<1.0,>=0.33.5 in ././local/lib/python3.10/site-packages (from gradio) (0.35.1)
 Requirement already satisfied: jinja2<4.0 in /usr/local/lib/python3.10/site-packages (from gradio) (3.1.2)
 Requirement already satisfied: markupsafe<4.0,>=2.0 in /usr/local/lib/python3.10/site-packages (from gradio) (2.1.3)
 Requirement already satisfied: numpy<3.0,>=1.0 in /usr/local/lib/python3.10/site-packages (from gradio) (1.26.2)
 Requirement already satisfied: orjson~=3.0 in ././local/lib/python3.10/site-packages (from gradio) (3.11.3)
 Requirement already satisfied: packaging in /usr/local/lib/python3.10/site-packages (from gradio) (23.2)
 Requirement already satisfied: pandas<3.0,>=1.0 in /usr/local/lib/python3.10/site-packages (from gradio) (2.1.3)
 Requirement already satisfied: pillow<12.0,>=8.0 in /usr/local/lib/python3.10/site-packages (from gradio) (10.1.0)
 Requirement already satisfied: pydantic<2.12,>=2.0 in ././local/lib/python3.10/site-packages (from gradio) (2.11.9)
 Requirement already satisfied: pydub in /usr/local/lib/python3.10/site-packages (from gradio) (0.25.1)
 Requirement already satisfied: python-multipart>=0.0.18 in ././local/lib/python3.10/site-packages (from gradio) (0.0.20)
 Requirement already satisfied: pyyaml<7.0,>=5.0 in /usr/local/lib/python3.10/site-packages (from gradio) (6.0.1)
 Requirement already satisfied: ruff>=0.9.3 in ././local/lib/python3.10/site-packages (from gradio) (0.13.1)
 Requirement already satisfied: safehttpx<0.2.0,>=0.1.6 in ././local/lib/python3.10/site-packages (from gradio) (0.1.6)
 Requirement already satisfied: semantic-version~=2.0 in /usr/local/lib/python3.10/site-packages (from gradio) (2.10.0)
 Requirement already satisfied: starlette<1.0,>=0.40.0 in ././local/lib/python3.10/site-packages (from gradio) (0.48.0)
 Requirement already satisfied: tomlkit<0.14.0,>=0.12.0 in /usr/local/lib/python3.10/site-packages (from gradio) (0.12.0)
 Requirement already satisfied: typer<1.0,>=0.12 in ././local/lib/python3.10/site-packages (from gradio) (0.19.2)
 Requirement already satisfied: typing-extensions~=4.0 in ././local/lib/python3.10/site-packages (from gradio) (4.15.0)
 Requirement already satisfied: uvicorn>=0.14.0 in /usr/local/lib/python3.10/site-packages (from gradio) (0.24.0.post1)
 Requirement already satisfied: fsspec in /usr/local/lib/python3.10/site-packages (from gradio-client==1.13.2->gradio) (2023.10.0)
 Requirement already satisfied: websockets<16.0,>=13.0 in


```

./local/lib/python3.10/site-packages (from gradio-client==1.13.2->gradio)
(15.0.1)
Requirement already satisfied: idna>=2.8 in /usr/local/lib/python3.10/site-
packages (from anyio<5.0,>=3.0->gradio) (3.6)
Requirement already satisfied: sniffio>=1.1 in /usr/local/lib/python3.10/site-
packages (from anyio<5.0,>=3.0->gradio) (1.3.0)
Requirement already satisfied: exceptiongroup in /usr/local/lib/python3.10/site-
packages (from anyio<5.0,>=3.0->gradio) (1.2.0)
Requirement already satisfied: certifi in /usr/local/lib/python3.10/site-
packages (from httpx<1.0,>=0.24.1->gradio) (2023.11.17)
Requirement already satisfied: httpcore==1.* in /usr/local/lib/python3.10/site-
packages (from httpx<1.0,>=0.24.1->gradio) (1.0.2)
Requirement already satisfied: h11<0.15,>=0.13 in
/usr/local/lib/python3.10/site-packages (from
httpcore==1.*->httpx<1.0,>=0.24.1->gradio) (0.14.0)
Requirement already satisfied: filelock in /usr/local/lib/python3.10/site-
packages (from huggingface-hub<1.0,>=0.33.5->gradio) (3.13.1)
Requirement already satisfied: requests in ./local/lib/python3.10/site-packages
(from huggingface-hub<1.0,>=0.33.5->gradio) (2.32.5)
Requirement already satisfied: tqdm>=4.42.1 in /usr/local/lib/python3.10/site-
packages (from huggingface-hub<1.0,>=0.33.5->gradio) (4.66.1)
Requirement already satisfied: hf-xet<2.0.0,>=1.1.3 in
./local/lib/python3.10/site-packages (from huggingface-
hub<1.0,>=0.33.5->gradio) (1.1.10)
Requirement already satisfied: python-dateutil>=2.8.2 in
/usr/local/lib/python3.10/site-packages (from pandas<3.0,>=1.0->gradio) (2.8.2)
Requirement already satisfied: pytz>=2020.1 in /usr/local/lib/python3.10/site-
packages (from pandas<3.0,>=1.0->gradio) (2023.3.post1)
Requirement already satisfied: tzdata>=2022.1 in /usr/local/lib/python3.10/site-
packages (from pandas<3.0,>=1.0->gradio) (2023.3)
Requirement already satisfied: annotated-types>=0.6.0 in
/usr/local/lib/python3.10/site-packages (from pydantic<2.12,>=2.0->gradio)
(0.6.0)
Requirement already satisfied: pydantic-core==2.33.2 in
./local/lib/python3.10/site-packages (from pydantic<2.12,>=2.0->gradio)
(2.33.2)
Requirement already satisfied: typing-inspection>=0.4.0 in
./local/lib/python3.10/site-packages (from pydantic<2.12,>=2.0->gradio) (0.4.1)
Requirement already satisfied: click>=8.0.0 in /usr/local/lib/python3.10/site-
packages (from typer<1.0,>=0.12->gradio) (8.1.7)
Requirement already satisfied: shellingham>=1.3.0 in
/usr/local/lib/python3.10/site-packages (from typer<1.0,>=0.12->gradio) (1.5.4)
Requirement already satisfied: rich>=10.11.0 in /usr/local/lib/python3.10/site-
packages (from typer<1.0,>=0.12->gradio) (13.5.3)
Requirement already satisfied: six>=1.5 in /usr/local/lib/python3.10/site-
packages (from python-dateutil>=2.8.2->pandas<3.0,>=1.0->gradio) (1.16.0)
Requirement already satisfied: markdown-it-py>=2.2.0 in
/usr/local/lib/python3.10/site-packages (from

```

```
rich>=10.11.0->typer<1.0,>=0.12->gradio) (3.0.0)
Requirement already satisfied: pygments<3.0.0,>=2.13.0 in
/usr/local/lib/python3.10/site-packages (from
rich>=10.11.0->typer<1.0,>=0.12->gradio) (2.16.1)
Requirement already satisfied: charset_normalizer<4,>=2 in
/usr/local/lib/python3.10/site-packages (from requests->huggingface-
hub<1.0,>=0.33.5->gradio) (3.3.2)
Requirement already satisfied: urllib3<3,>=1.21.1 in
/usr/local/lib/python3.10/site-packages (from requests->huggingface-
hub<1.0,>=0.33.5->gradio) (1.26.18)
Requirement already satisfied: mdurl~=0.1 in /usr/local/lib/python3.10/site-
packages (from markdown-it-py>=2.2.0->rich>=10.11.0->typer<1.0,>=0.12->gradio)
(0.1.1)
```

```
[11]: # 3. Define Gradio interface function
def chatbot_interface(query):
    result = qa_chain.invoke({"input": query})
    return result["answer"]

# 4. Launch Gradio app with bigger output box
interface = gr.Interface(
    fn=chatbot_interface,
    inputs=gr.Textbox(lines=2, placeholder="Ask about Nestlé HR policies..."),
    outputs=gr.Textbox(lines=10), # <-- bigger output box with 10 lines
    title="Nestlé HR Assistant",
    description="Ask any question about Nestlé's HR policy. The assistant will_
    provide accurate information based on internal documents."
)

interface.launch(share=True)
```

```
* Running on local URL: http://127.0.0.1:7860
* Running on public URL: https://249a649125a1f9130c.gradio.live
```

This share link expires in 1 week. For free permanent hosting and GPU upgrades, run `gradio deploy` from the terminal in the working directory to deploy to Hugging Face Spaces (<https://huggingface.co/spaces>)

<IPython.core.display.HTML object>

[11]:

```
Number of requested results 4 is greater than number of elements in index 3,
updating n_results = 3
Number of requested results 4 is greater than number of elements in index 3,
updating n_results = 3
Number of requested results 4 is greater than number of elements in index 3,
updating n_results = 3
```

Number of requested results 4 is greater than number of elements in index 3,
updating n_results = 3

[]:

[]: