

```
pip install torch transformers langchain
```

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Requirement already satisfied: torch in /usr/local/lib/python3.12/dist-packages (2.8.0+cu126)
Requirement already satisfied: transformers in /usr/local/lib/python3.12/dist-packages (4.57.1)
Requirement already satisfied: langchain in /usr/local/lib/python3.12/dist-packages (0.3.27)
Requirement already satisfied: filelock in /usr/local/lib/python3.12/dist-packages (from torch) (3.20.0)
Requirement already satisfied: typing-extensions>=4.10.0 in /usr/local/lib/python3.12/dist-packages (from torch) (4.15.0)
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)
Requirement already satisfied: nvidia-cuda-runtime-cu12==12.6.77 in /usr/local/lib/python3.12/dist-packages (from torch) (12)
Requirement already satisfied: nvidia-cuda-cupti-cu12==12.6.80 in /usr/local/lib/python3.12/dist-packages (from torch) (12)
Requirement already satisfied: nvidia-cudnn-cu12==9.10.2.21 in /usr/local/lib/python3.12/dist-packages (from torch) (9.10)
Requirement already satisfied: nvidia-cublas-cu12==12.6.4.1 in /usr/local/lib/python3.12/dist-packages (from torch) (12.6)
Requirement already satisfied: nvidia-cufft-cu12==11.3.0.4 in /usr/local/lib/python3.12/dist-packages (from torch) (11.3.0)
Requirement already satisfied: nvidia-curand-cu12==10.3.7.77 in /usr/local/lib/python3.12/dist-packages (from torch) (10.3)
Requirement already satisfied: nvidia-cusolver-cu12==11.7.1.2 in /usr/local/lib/python3.12/dist-packages (from torch) (11)
Requirement already satisfied: nvidia-cusparselt-cu12==12.5.4.2 in /usr/local/lib/python3.12/dist-packages (from torch) (12)
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Requirement already satisfied: nvidia-nccl-cu12==2.27.3 in /usr/local/lib/python3.12/dist-packages (from torch) (2.27.3)
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Requirement already satisfied: nvidia-nvjitlink-cu12==12.6.85 in /usr/local/lib/python3.12/dist-packages (from torch) (12)
Requirement already satisfied: nvidia-cufile-cu12==1.11.1.6 in /usr/local/lib/python3.12/dist-packages (from torch) (1.11)
Requirement already satisfied: triton==3.4.0 in /usr/local/lib/python3.12/dist-packages (from torch) (3.4.0)
Requirement already satisfied: huggingface-hub<1.0,>=0.34.0 in /usr/local/lib/python3.12/dist-packages (from transformers) (0.24.0)
Requirement already satisfied: numpy>=1.17 in /usr/local/lib/python3.12/dist-packages (from transformers) (2.0.2)
Requirement already satisfied: packaging>=20.0 in /usr/local/lib/python3.12/dist-packages (from transformers) (25.0)
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) (0.20.3)
Requirement already satisfied: safetensors>=0.4.3 in /usr/local/lib/python3.12/dist-packages (from transformers) (0.6.2)
Requirement already satisfied: tqdm>=4.27 in /usr/local/lib/python3.12/dist-packages (from transformers) (4.67.1)
Requirement already satisfied: langchain-core<1.0.0,>=0.3.72 in /usr/local/lib/python3.12/dist-packages (from langchain) (0.3.72)
Requirement already satisfied: langchain-text-splitters<1.0.0,>=0.3.9 in /usr/local/lib/python3.12/dist-packages (from langchain) (0.3.9)
Requirement already satisfied: langsmith>=0.1.17 in /usr/local/lib/python3.12/dist-packages (from langchain) (0.4.38)
Requirement already satisfied: pydantic<3.0.0,>=2.7.4 in /usr/local/lib/python3.12/dist-packages (from langchain) (2.11.10)
Requirement already satisfied: SQLAlchemychemy<3,>=1.4 in /usr/local/lib/python3.12/dist-packages (from langchain) (2.0.44)
Requirement already satisfied: hf-xet<2.0.0,>=1.1.3 in /usr/local/lib/python3.12/dist-packages (from huggingface-hub<1.0,>=0.34.0) (1.1.3)
Requirement already satisfied: tenacity!=8.4.0,<10.0.0,>=8.1.0 in /usr/local/lib/python3.12/dist-packages (from langchain-core<1.0.0,>=0.3.72) (9.0.0)
Requirement already satisfied: jsonpatch<2.0.0,>=1.33.0 in /usr/local/lib/python3.12/dist-packages (from langchain-core<1.0.0,>=0.3.72) (1.33.0)
Requirement already satisfied: httpx<1,>=0.23.0 in /usr/local/lib/python3.12/dist-packages (from langsmith>=0.1.17->langchain-core<1.0.0,>=0.3.72) (0.27.0)
Requirement already satisfied: orjson>=3.9.14 in /usr/local/lib/python3.12/dist-packages (from langsmith>=0.1.17->langchain-core<1.0.0,>=0.3.72) (3.10.15)
Requirement already satisfied: requests-toolbelt>=1.0.0 in /usr/local/lib/python3.12/dist-packages (from langsmith>=0.1.17->langchain-core<1.0.0,>=0.3.72) (1.0.0)
Requirement already satisfied: zstandard>=0.23.0 in /usr/local/lib/python3.12/dist-packages (from langsmith>=0.1.17->langchain-core<1.0.0,>=0.3.72) (0.23.0)
Requirement already satisfied: annotated-types>=0.6.0 in /usr/local/lib/python3.12/dist-packages (from pydantic<3.0.0,>=2.7.4) (0.6.0)
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Requirement already satisfied: typing-inspection>=0.4.0 in /usr/local/lib/python3.12/dist-packages (from pydantic<3.0.0,>=2.7.4) (0.4.0)
Requirement already satisfied: charset-normalizer<4,>=2 in /usr/local/lib/python3.12/dist-packages (from requests->transformers) (3.4.0)
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) (2.3.0)
Requirement already satisfied: certifi>=2017.4.17 in /usr/local/lib/python3.12/dist-packages (from requests->transformers) (2025.1.31)
Requirement already satisfied: greenlet>=1 in /usr/local/lib/python3.12/dist-packages (from SQLAlchemychemy<3,>=1.4->langchain-core<1.0.0,>=0.3.72) (3.1.1)
Requirement already satisfied: MarkupSafe>=2.0 in /usr/local/lib/python3.12/dist-packages (from Jinja2->torch) (3.0.3)
Requirement already satisfied: anyio in /usr/local/lib/python3.12/dist-packages (from httpx<1,>=0.23.0->langsmith>=0.1.17->langchain-core<1.0.0,>=0.3.72) (4.6.2)
Requirement already satisfied: httptools>=0.6.4 in /usr/local/lib/python3.12/dist-packages (from httpx<1,>=0.23.0->langsmith>=0.1.17->langchain-core<1.0.0,>=0.3.72) (0.6.4)
Requirement already satisfied: h11>=0.14.0 in /usr/local/lib/python3.12/dist-packages (from httptools>=0.6.4->httpx<1,>=0.23.0->langsmith>=0.1.17->langchain-core<1.0.0,>=0.3.72) (0.14.0)
```

```
from transformers import AutoModelForCausalLM, AutoTokenizer, pipeline
from langchain_community.llms import HuggingFacePipeline
from langchain.prompts import PromptTemplate
```

```
-----
ModuleNotFoundError                                Traceback (most recent call last)
/tmp/ipython-input-2111519355.py in <cell line: 0>()
      1 from transformers import AutoModelForCausalLM, AutoTokenizer, pipeline
```

```
model_name = "gpt2" # You can use "distilgpt2" for smaller model
tokenizer = AutoTokenizer.from_pretrained(model_name)
model = AutoModelForCausalLM.from_pretrained(model_name)
```

```
pipe = pipeline(
    "text-generation",
    model=model,
    tokenizer=tokenizer,
    max_length=100,
    temperature=0.7,
    top_k=50
)
```

```
-----
NameError                                Traceback (most recent call last)
/tmp/ipython-input-2406127664.py in <cell line: 0>()
      1 pipe = pipeline(
      2     "text-generation",
----> 3     model=model,
      4     tokenizer=tokenizer,
      5     max_length=100,

NameError: name 'model' is not defined
```

```
prompt = PromptTemplate(
    input_variables=["topic"],
    template="Write a short informative paragraph about {topic} in a friendly tone."
)
```

```
-----
NameError                                Traceback (most recent call last)
/tmp/ipython-input-1172121843.py in <cell line: 0>()
----> 1 prompt = PromptTemplate(
      2     input_variables=["topic"],
      3     template="Write a short informative paragraph about {topic} in a friendly tone."
      4 )

NameError: name 'PromptTemplate' is not defined
```