NLP section 2

NLP tools

Core & General Purpose Libraries

1- spaCy - NLP library with fast pipelines and pretrained models.

2- NLTK - research-oriented, includes tokenizers, corpora, and classic NLP algorithms.

3- Stanza - neural pipeline for tokenization, tagging, parsing, and NER.

4- TextBlob - sentiment analysis, POS tagging, and classification (built on NLTK + Pattern).

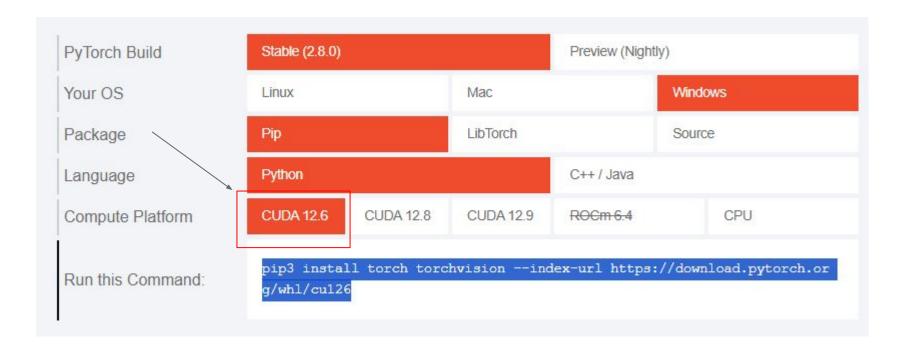# Code Example on Core & General Purpose Libraries

DL Frameworks

1- Pytorch

2- Tensorflow

3- JAX

4- Hugging Face Transformers

And much more, every other day you will see a different deep learning framework.

Pytorch Installation

PyTorch Build	Stable (2.8.0)		Preview (Nightly)	
Your OS	Linux	Mac	Windows	
Package	Pip	LibTorch	Source	
Language	Python	C++ / Java		
Compute Platform	CUDA 12.6	CUDA 12.8	CUDA 12.9	ROCm 6.4	CPU
Run this Command:	pip3 install torch torchvision --index-url https://download.pytorch.org/whl/cu126				

What is CUDA?

CUDA

- ❏ Developed by NVIDIA for parallel computing on GPUs.

- ❏ Enables general-purpose computation (not just graphics) on GPUs.

- ❏ Uses thousands of small cores to perform many calculations simultaneously.

- ❏ Provides massive speedup for deep learning, scientific computing, and simulations.

- ❏ Integrated with frameworks like PyTorch, TensorFlow, and Numba.

- ❏ Requires an NVIDIA GPU and compatible CUDA Toolkit installation.

Code Example on CUDA &
DL Frameworks