# The pytorch ecosystem

02457 Machine Learning Operations

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# The ecosystem

Collection of framework build to be used in combination with Pytorch

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# Fremwork categorising

| Data specific frameworks | Training frameworks | Utility fremeworks |
|---|---|---|
| Transformers | fastai | Albumentations |
| Detectron2 | Ray | PySyft |
| Pytorch geometric | Pytorch Lightning | Pyro |
| Flair | Horovod | Optuna |
| AllenNLP | DeepSpeed | Hydra |
| ParlAI | ONNX Runtime | Pytorch Metric Learning |
| DGL | skorch | Einops |
| PyTorch3D | Ignite | |
| MMF | Polyaxon | |
| Kornia | | |

# Project work

- Organise, plan and execute an MLOps project

- What you will be evaluated on

- Done in groups

- You will be asked to implement what is showcased in the exercises in your project work

- Each Friday afternoon you will be asked to upload you current progress to github

- Monday after will be given small feedback

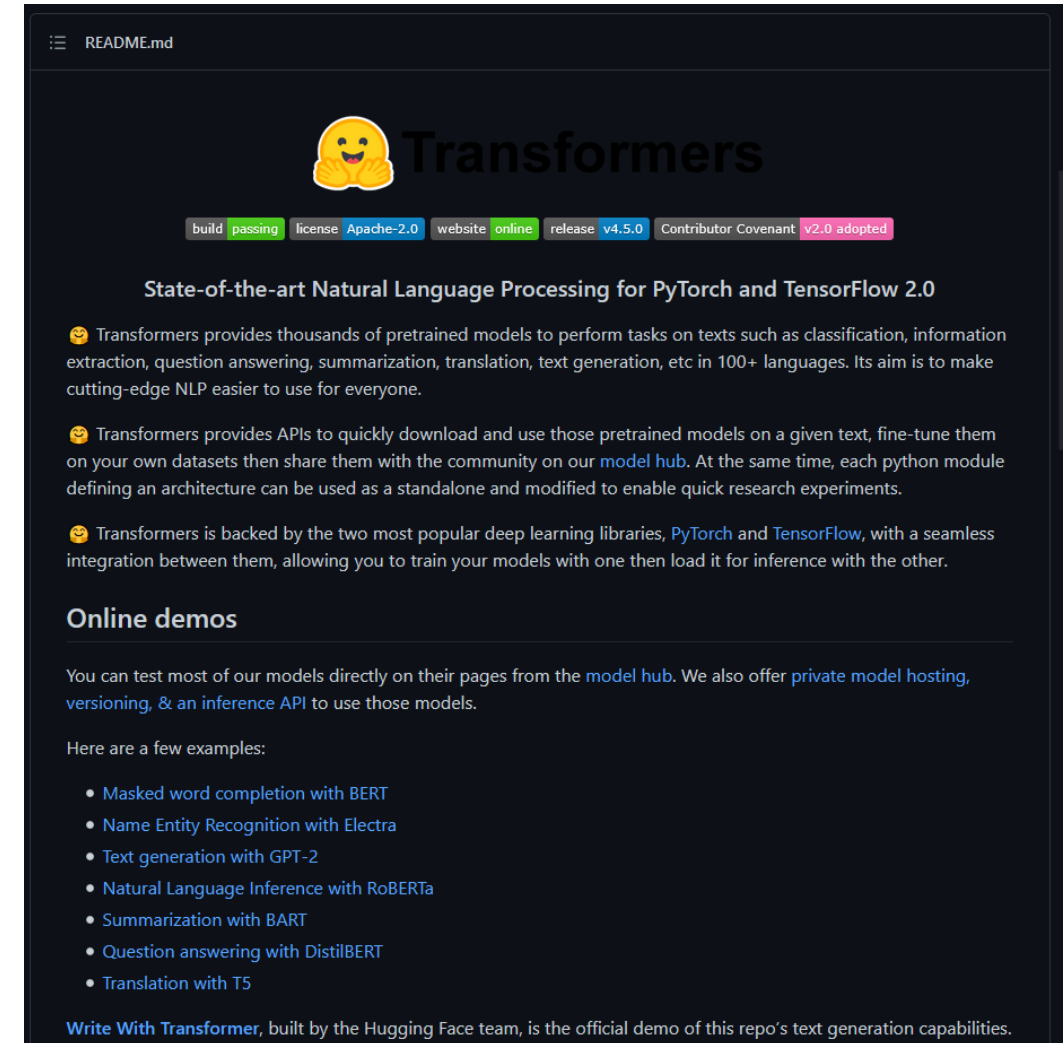- Final day of the course you will be presenting your project work

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# Project 1: NLP

Fremework: Transformers (Huggingface)

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https://github.com/huggingface/transformers

Most starred framework in the ecosystem

Use to do Natural Language Processing
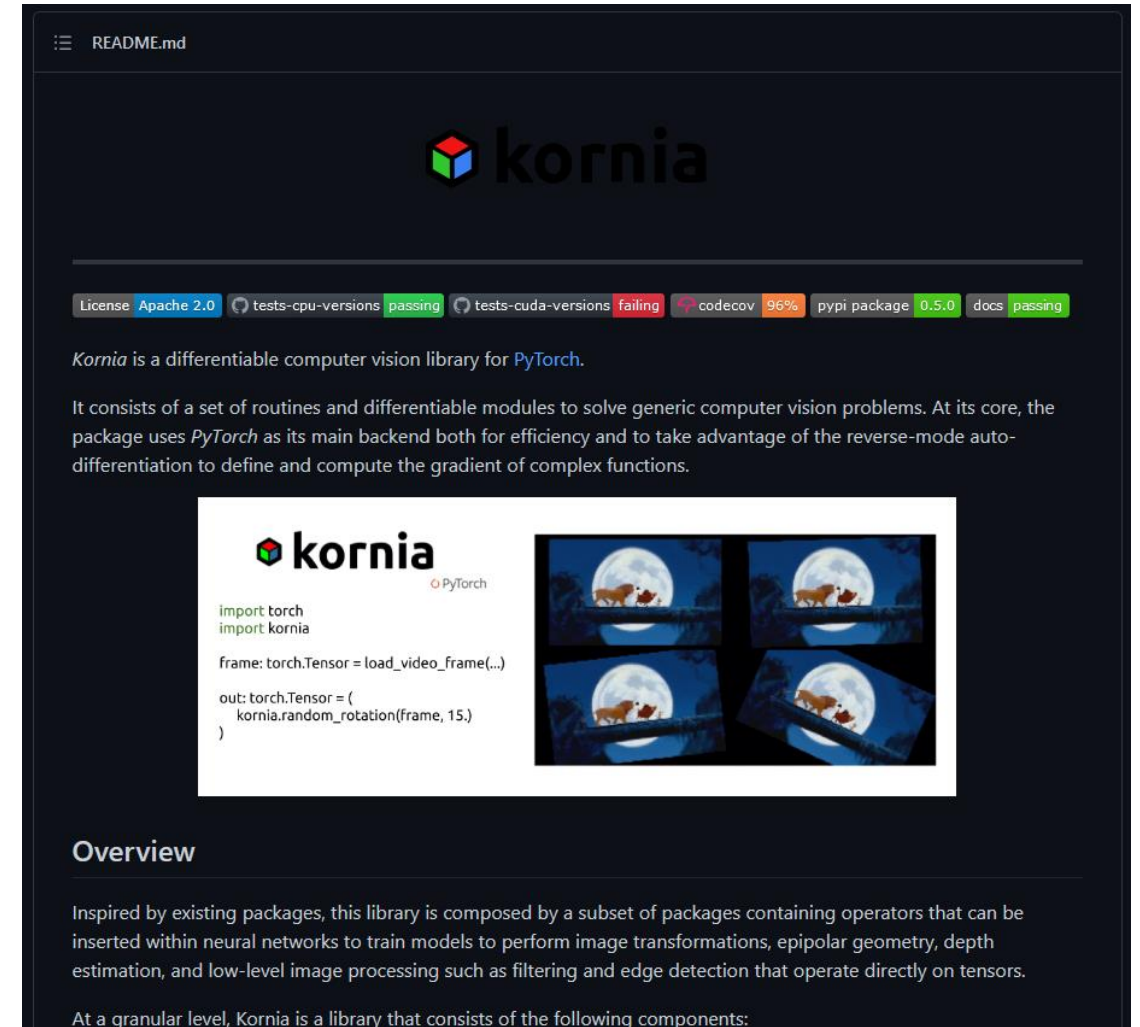
# Project 2: CV

Framework: Kornia

https://github.com/kornia/kornia

Differentiable computer vision algoritms



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# Project 3: Graphs and points

Framework: Pytorch Geometric

# Getting a good idea



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# Summary

- Pick a framework (try running their notebooks/examples!):
  - Project 1: NLP
  - Project 2: CV
  - Project 3: Graphs and points
- Come up with a project
- Write a small (max 1 page) project description including:
  - What model do intent to implement
  - What data are you going to use
  - How to you intent to include the framework