Practical Lab 2 (mini-project)

Deep learning for object detection

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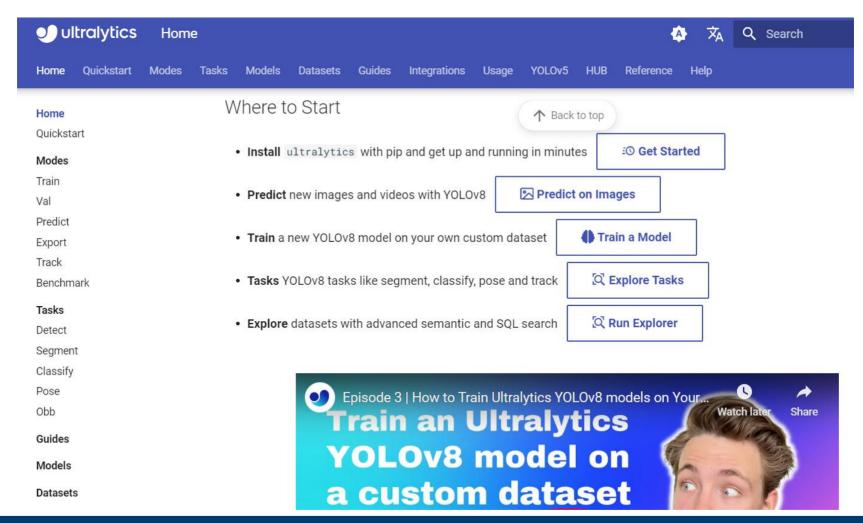*minh-tan.pham@univ-ubs.fr*

Lab assignment

Practical lab2 (mini-project) AL5.A.01: Deep learning for object detection

- 2 weeks of class/work + 1 week of presentation (oral)

- You have to choose one of the following tasks and search for public datasets that you would like to demonstrate (from Kaggle other public datasets available, **not too big** !!!!)
    - **Ship detection**
    - **Vehicle detection**
    - **Animal detection**
    - **Fish detection**
    - **Other object detection tasks**

- Use **YOLOv8 (or YOLOv9)** and **Detectron2** to perform training/test of your object detection task ! (One is minimum, two for comparison is perfect !)

- Your submission (in a zip file named *AL5A07_YourGroupName.zip*) should include:
    - A PDF presentation (max 15 slides)
    - A Jupyter notebook file that includes your implementation + compiled outputs

- **Evaluation:** presentation 60% + submission (slides+notebook) 40% + bonus (participation during presentations)

YOLOv8 Ultralytics

Site web: https://docs.ultralytics.com/
Github: https://github.com/ultralytics/ultralytics

Detectron2

Site web: https://ai.meta.com/tools/detectron2/
Github: https://github.com/facebookresearch/Detectron2

Meta

Detectron2

Detectron2 is FAIR's next-generation platform for object detection and segmentation.

Rapid, flexible research

Detectron2 was built by Facebook AI Research (FAIR) to support rapid implementation and evaluation of novel computer vision research. It includes implementations for the following object detection algorithms:

- Mask R-CNN
- RetinaNet
- Faster R-CNN
- RPN
- Fast R-CNN
- TensorMask