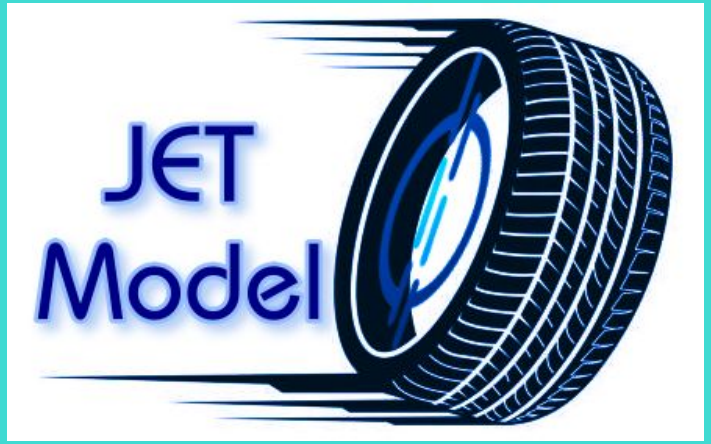
Jedha

Your Tech Bootcamp



Group 2 - JET Model

(Jedha Evaluation Tyres)

Group members:

- Floriane Dussart
- Youenn Patat

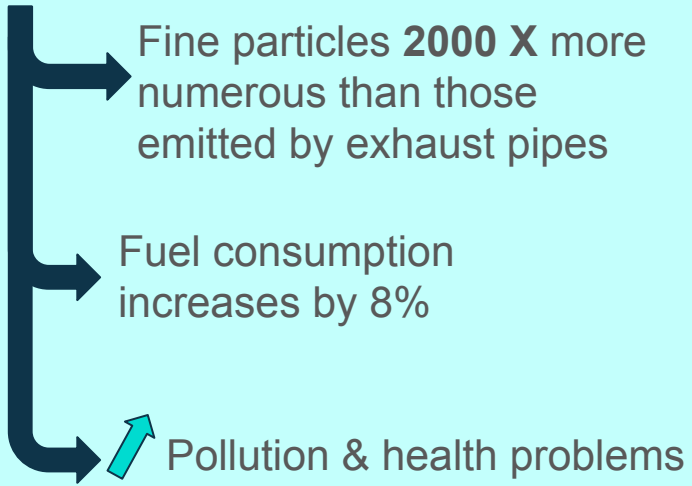
Context/Motivation

- To help users to maintain tyres of their vehicles
- 🚨🛞Tyre quality control by image:
  - Good condition (fit to drive) ✅
  - Bad condition (not fit to drive) ❌

➔ Accidental statistics

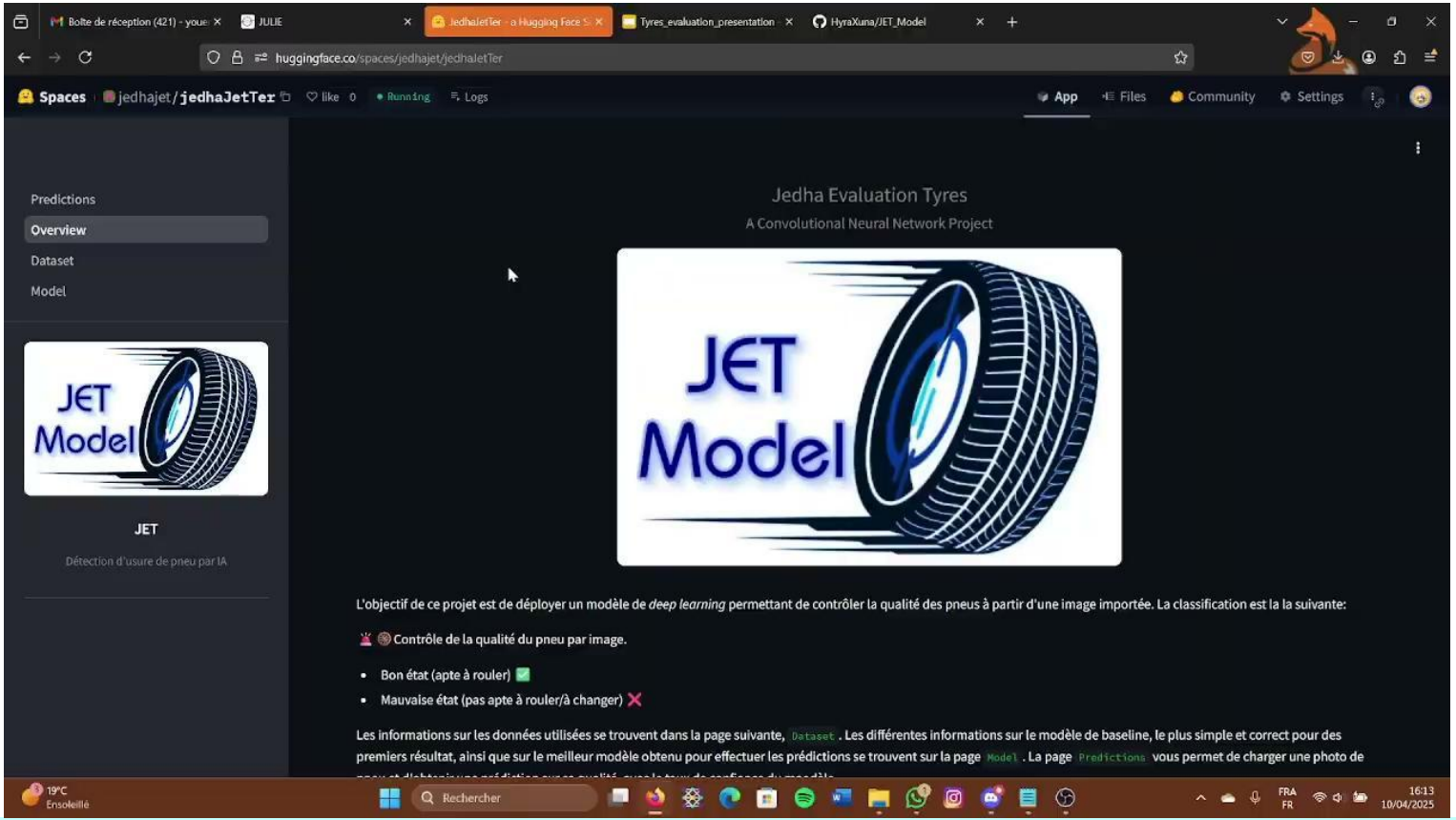
- In France & Europe, **6%** of fatal road accidents

➔ Ecological impact



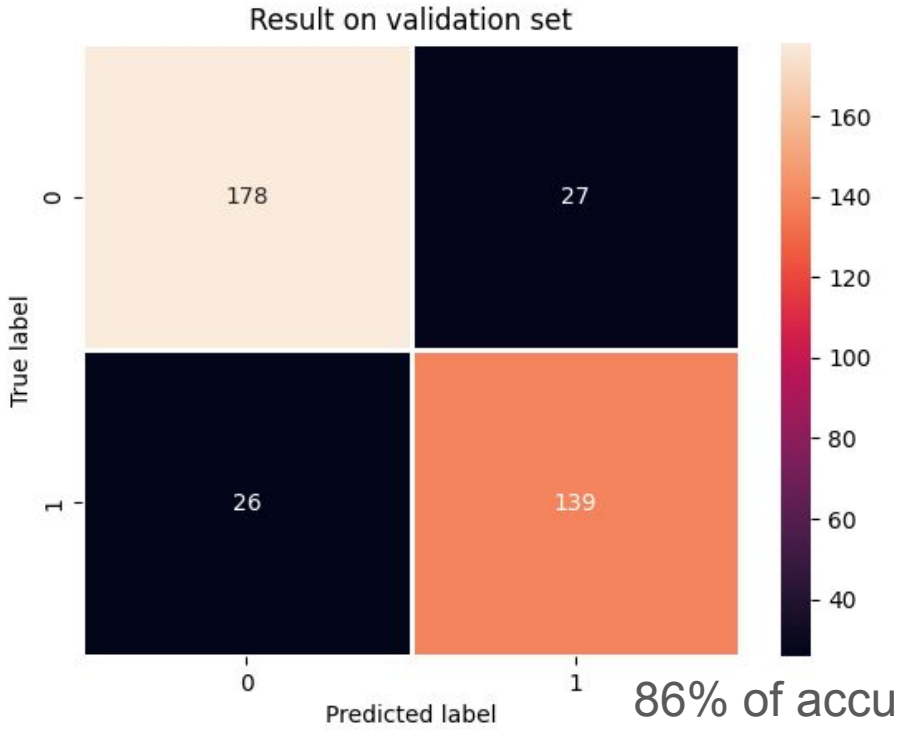
Results

Our App : https://huggingface.co/spaces/jedhajet/jedhaJetTer



Results for our best model

Confusion matrix



86% of accuracy

- Satisfying results
- We can imagine use the model in sensors in the car, that can take pictures of tyre and send the result of tyre's quality into the dashboard of the car

Ok to drive ✅
Good quality

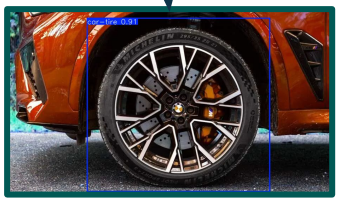
Not Ok to drive ❌
Bad quality
Change your tyre

- Help to reduce accident and pollution with a better maintaining of tyres

Solution description

Deep Learning

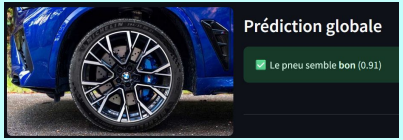
Detection model



Preprocessing
OpenCv

Classification
model

Global Prediction



Clipped
Prediction

Problems encountered

- ➔ Little Dataset (~1800 images). Limit for performances in deep learning
- ➔ Not enough dataset with more labels for a more precise classification
- ➔ Image processing is not straightforward to generalize to images of entire wheels and indicate results for each area of the tyre.

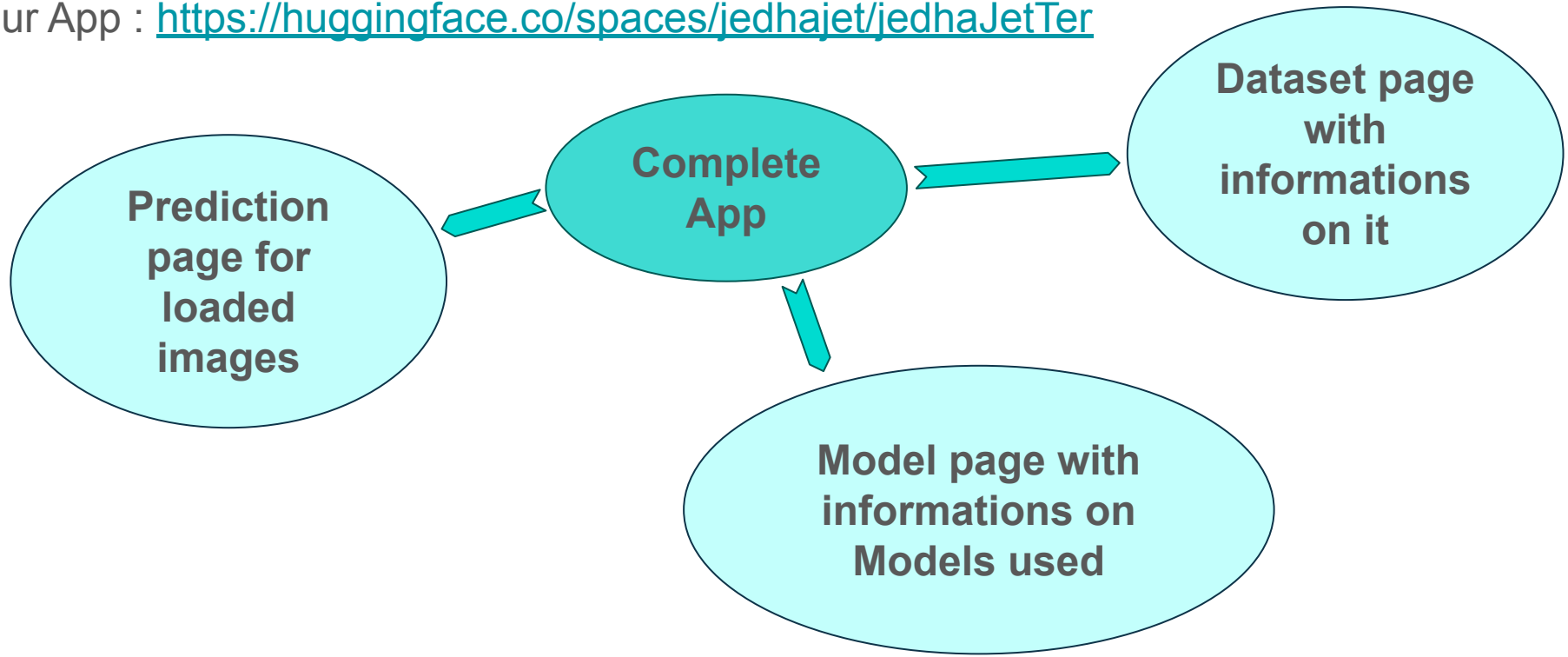
What's next?

- ➔ Improve the image processing to generalize if we have a full wheel image. Select areas with tyre and predict on these sub-images to have a result (average/vote)
- ➔ Use bigger dataset with more classes (Not just ✅ or ❌). Improve the answer with a more precise answer like:
- ➔ Maybe by doing some scraping

Class	Answer
100%	Perfect tyre
100-70%	Good quality
70-50	Medium, It's ok but warning. Think to change it shortly
<50%	Bad. Change it

Conclusion

Our App : https://huggingface.co/spaces/jedhajet/jedhaJetTer



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Any questions ?