

Exercise: YOLO9000 (Reading Task - ca. 1-2h, depends on how fast you read & understand...)

## 1. Learning goal

In the last lecture we discussed the original YOLO paper from 2015. However, in 2016 the authors have published an improved version of the YOLO model which they called YOLOv2. The goal of this paper is to read another state-of-the-art publication on object detection and to understand how the authors improved their model.

## 2. Read the YOLO9000 paper

First read the paper:

Redmon, J. & Farhadi, A.  
YOLO9000: Better, Faster, Stronger

## 3. Questions

- 1.) How do classification and detection datasets currently differ from each other?
- 2.) What is meant by “YOLOv2” and what is meant by “YOLO9000”?
- 3.) What are the main drawbacks of YOLO(v1) according to the authors?
- 4.) Try to formulate some of the ideas mentioned in the paper to improve on the YOLO(v1) model with your own words!
- 5.) What is meant by “dimension clusters”?
- 6.) What is the idea of a “pass-through layer”? How much performance increase do we gain with it?
- 7.) How does “joint training on classification and detection data” work?
- 8.) What is “softmax”? What is the problem with softmax mentioned in the paper?