



Master in
Computer Vision
Barcelona

M5 Project: Cross-modal Retrieval

Week 3

Challenges of Object Detection and Instance Segmentation

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P3 Challenges of Object Det. and Seg.

Show co-occurrence matrix

Class	person	tie	tennis racket	wine glass	bottle	fork
person	100%	5.67%	5.24%	2.57%	7.11%	2.76%
tie	95.33%	100%	2.13%	5.41%	6.09%	2.24%
tennis racket	99.03%	2.39%	100%	.03%	3.10%	0.00%
wine glass	65.02%	8.13%	.04%	100%	44.02%	26.33%
bottle	53.65%	2.73%	1.24%	13.11%	100%	10.87%
fork	49.76%	2.36%	0.00%	18.76%	25.99%	100%

Prob of a second instance of the same class?

P3 Challenges of Object Det. and Seg.

Object positions / orientations matter:

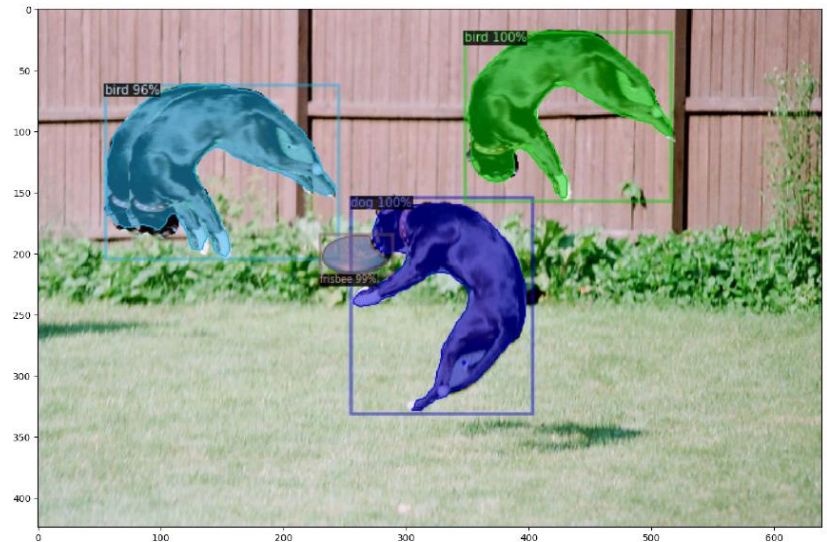
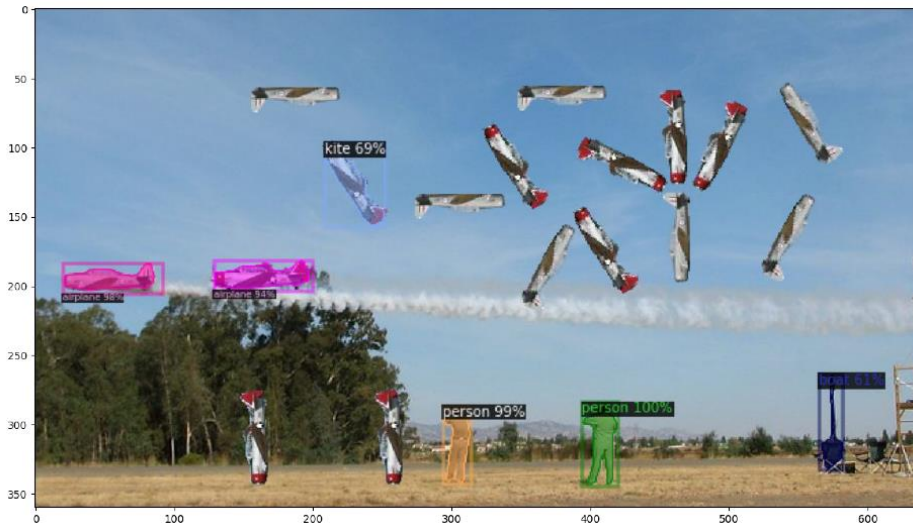
- Up-side down objects harder to detect/segment.



P3 Challenges of Object Det. and Seg.

Object positions / orientations matter:

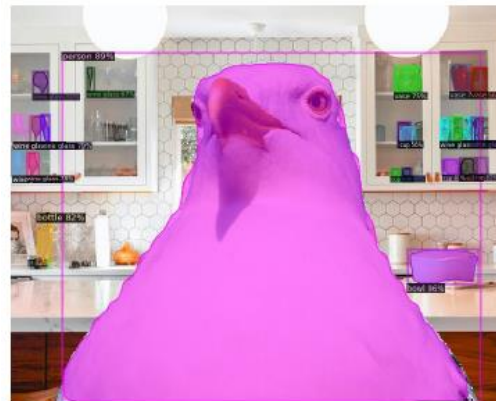
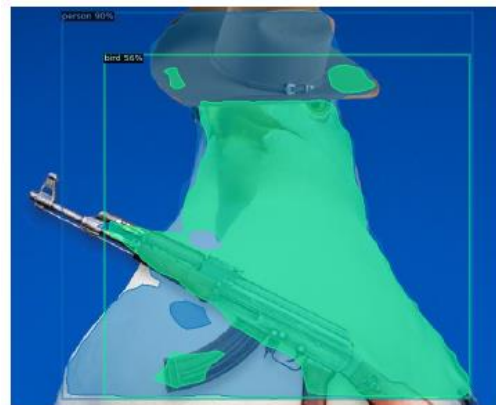
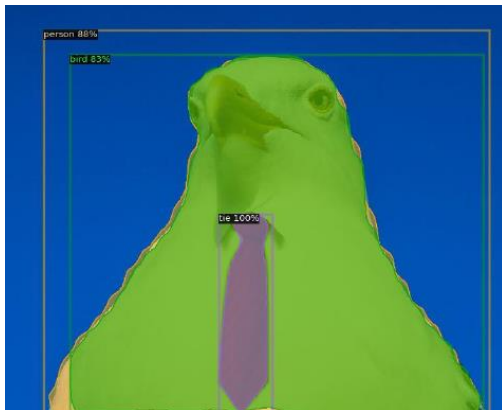
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P3 Challenges of Object Det. and Seg.

Size / background / co-occurrent objects matter:

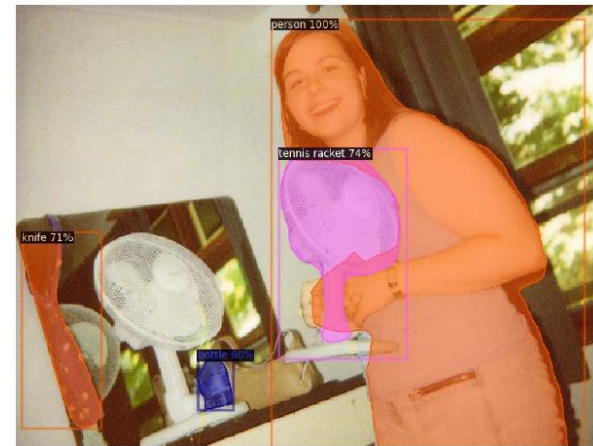
- Go crazy. Curiosity is always welcome and might help you find new insights



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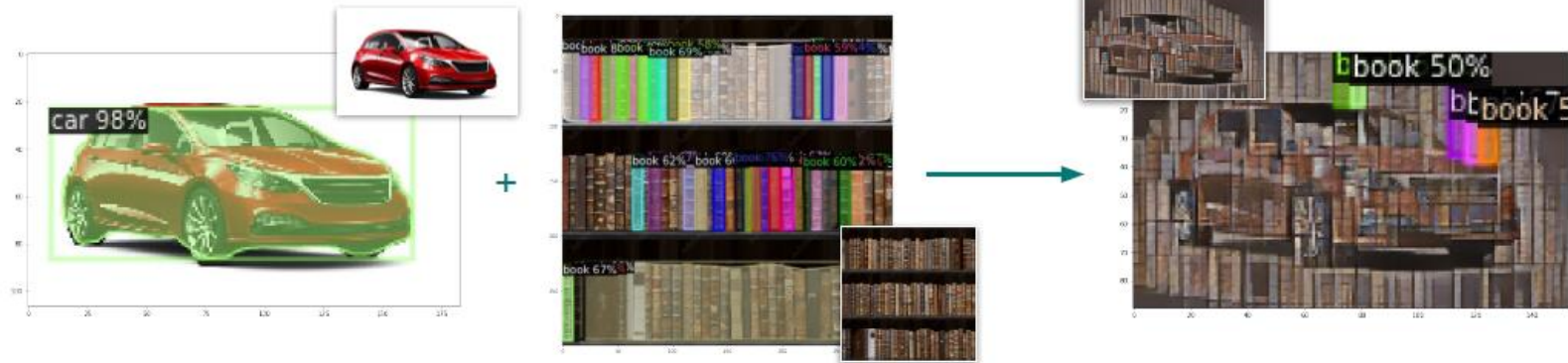
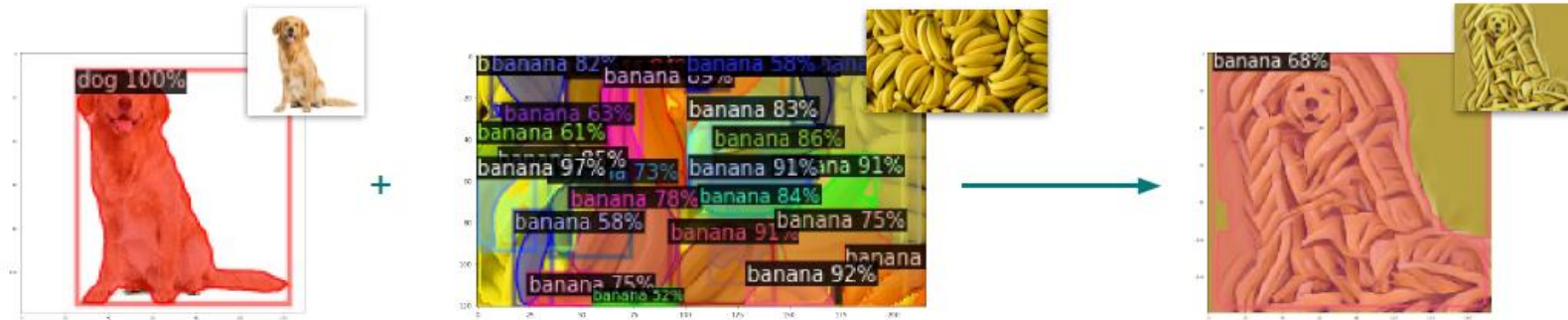


Adversarial attacks:



Granny Smith	0.1%
iPod	99.7%
library	0.0%
pizza	0.0%
toaster	0.0%
dough	0.0%

P3 Challenges of Object Det. and Seg.



Cat fur

