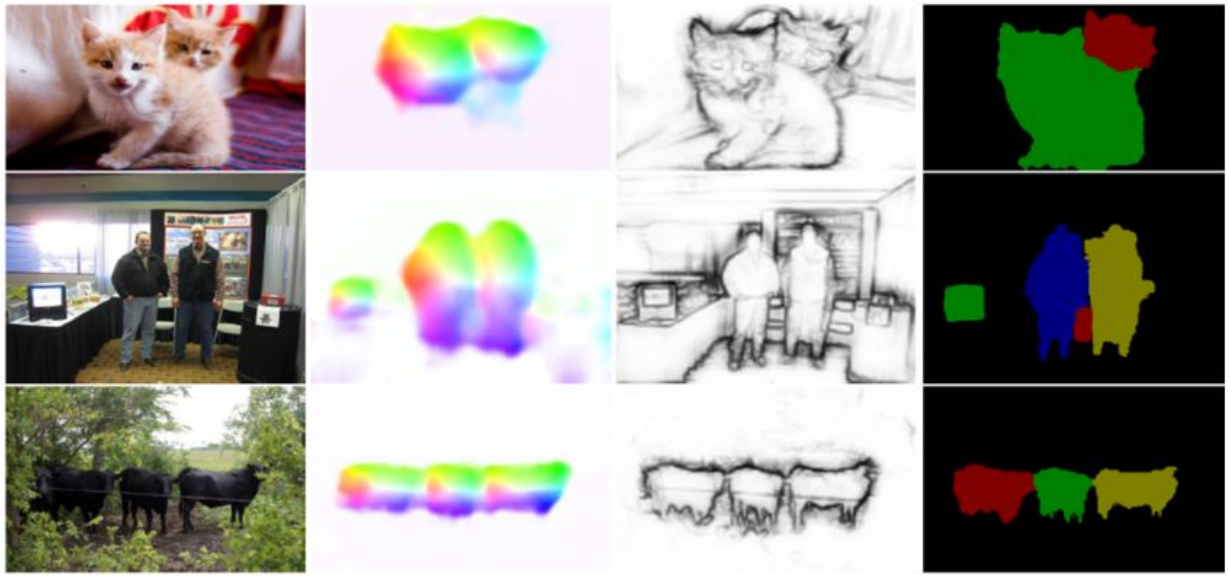
Weakly Supervised Learning of Instance Segmentation with Inter-pixel Relations

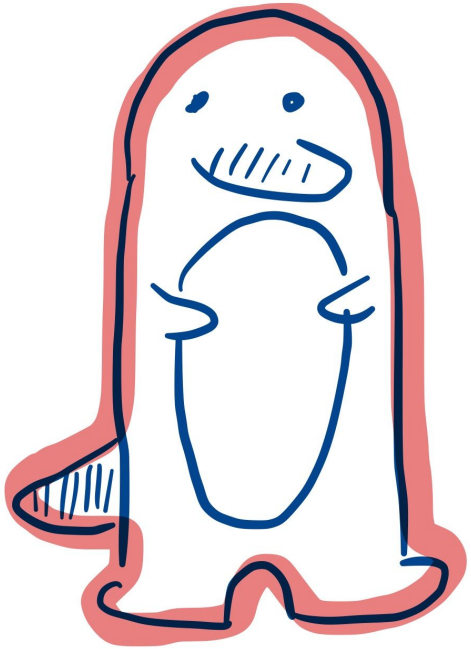


How to improve IRNet

Qualitative Performance of IRNet

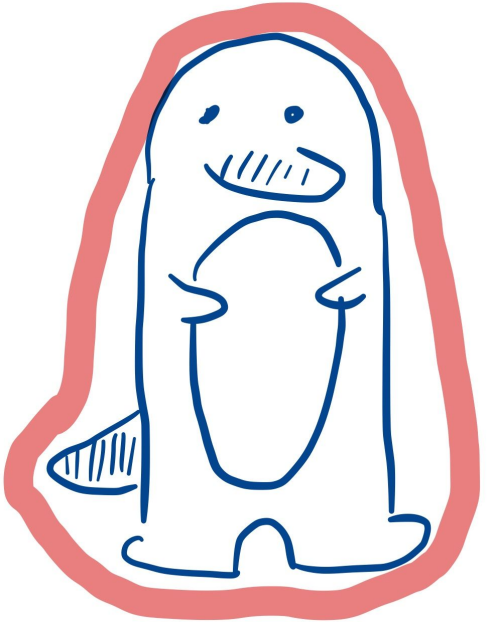
Ideal vs. Output

Ideal



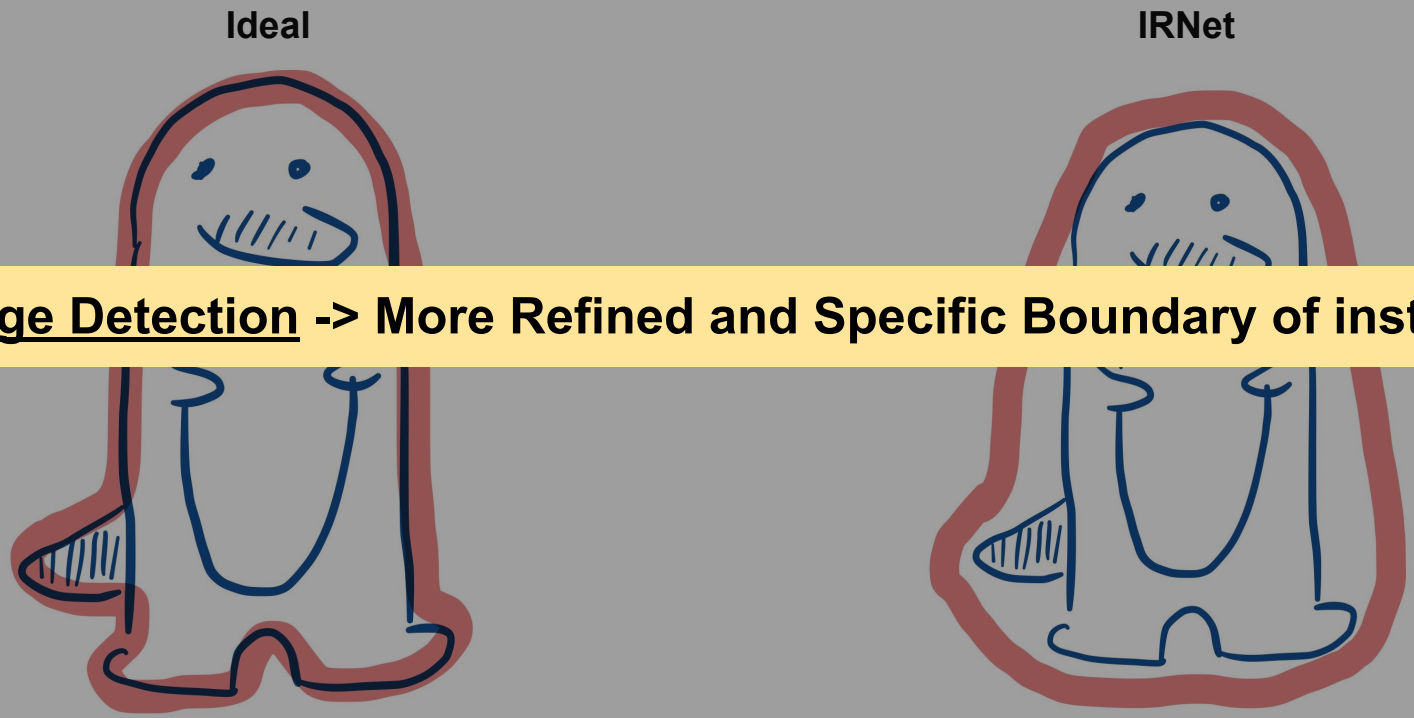
penguin:
0.96

IRNet



penguin:
0.96

Ideal vs. Output

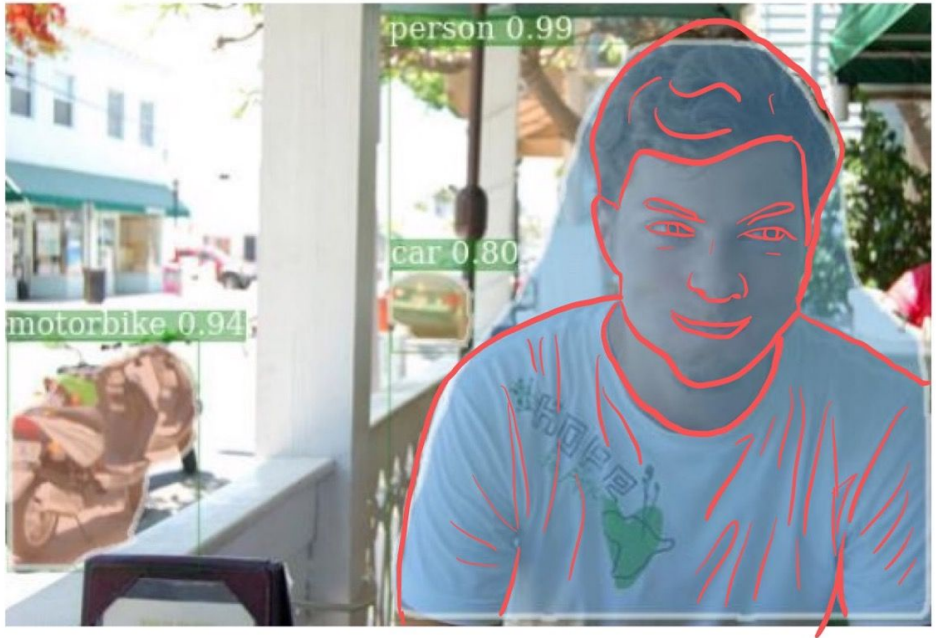


Edge Detection -> More Refined and Specific Boundary of instances

How?

1. **Look for Edge** that is **related to Instance**

: edge most related to instance



How?

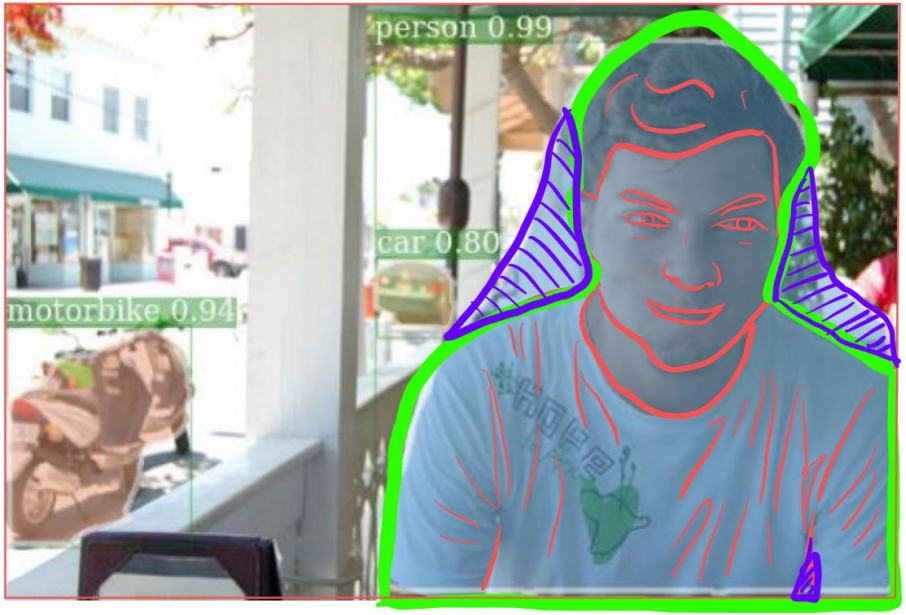
2. **Find the <u>most outer</u> edge that is <u>enclosed</u> (border of the photo counts as edge)**

: most outer enclosed edge

How?

3. <u>Regard pixels outside</u> the the most outer edge that is enclosed as <u>not belonging to the particular instance.</u>

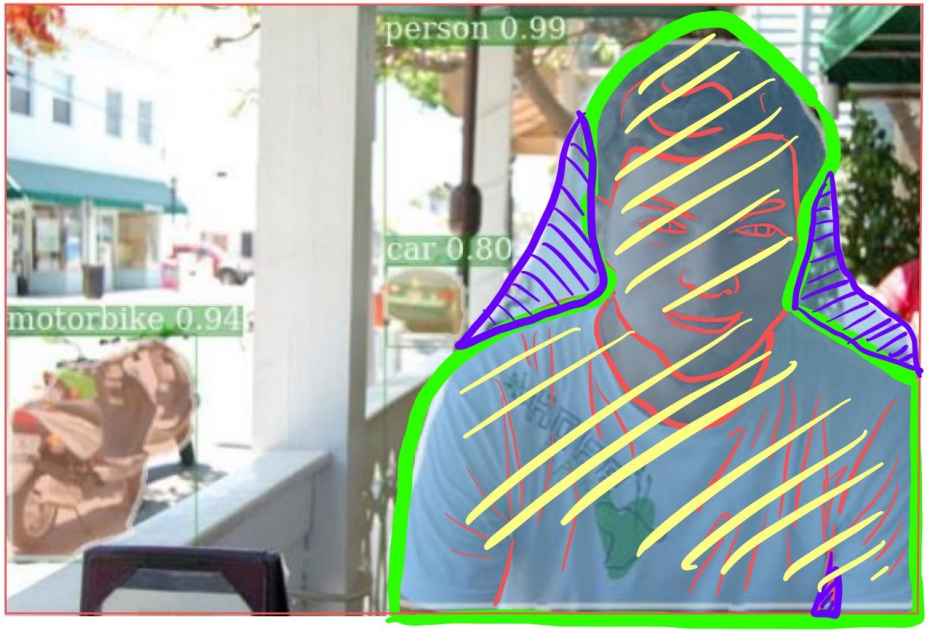
: pixels that do not consist of the instance anymore



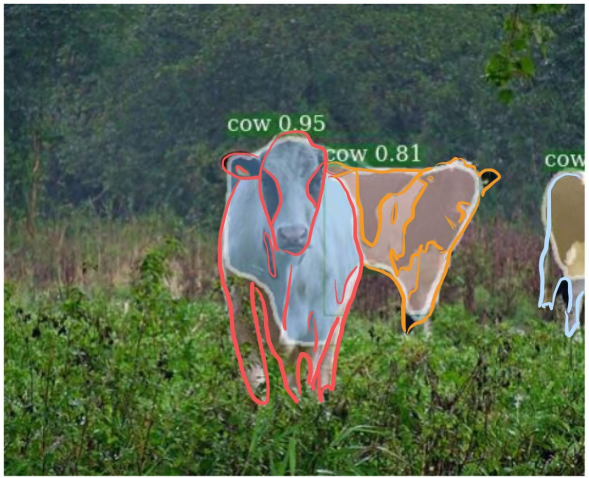
How?

4. <u>Regard pixels inside</u> the the most outer edge that is enclosed as <u>belonging to the particular instance.</u>

: pixels that do consist of the instance

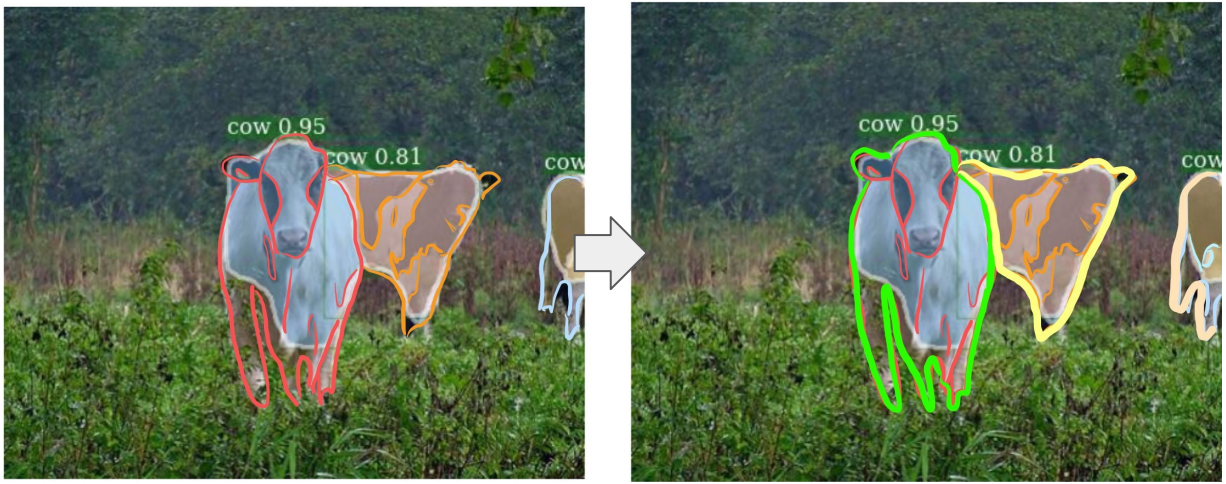


Even when there are multiple overlapping instances



edge detection

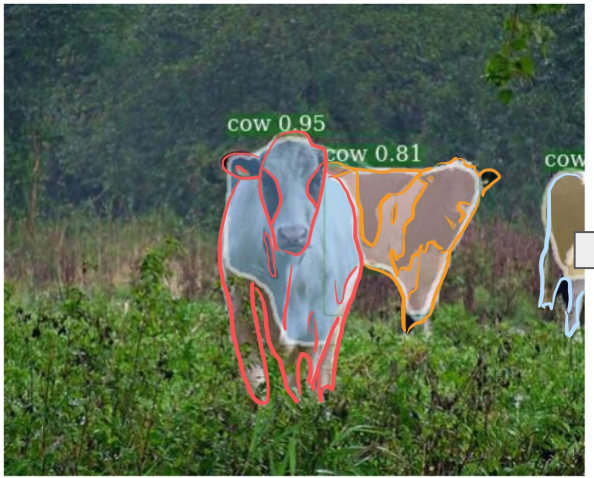
Even when there are multiple overlapping instances



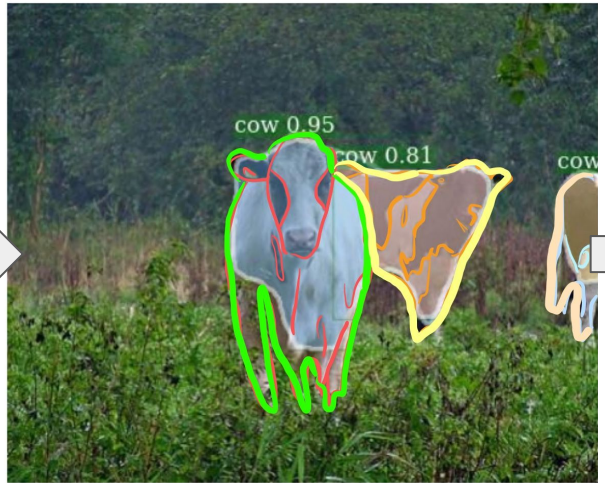
edge detection

find outer and enclosed edge

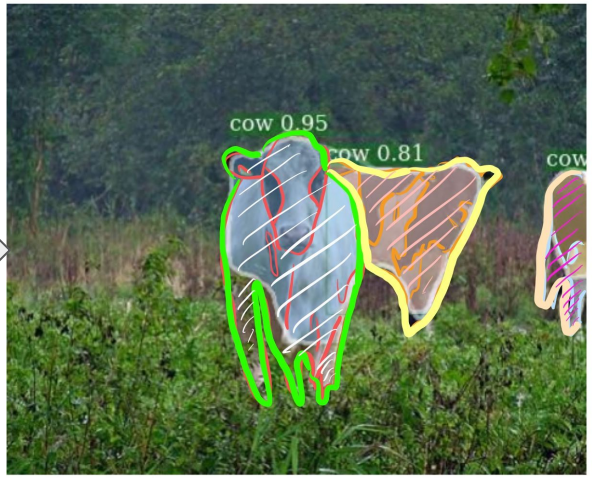
Even when there are multiple overlapping instances



edge detection



find outer and enclosed edge



reassign the classes of pixels that are near the outer edges.