

Report: Lab3-Dectectron2

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A. Detecting Objects in Frames:

In this lab exercise, am going to build an object tracker which aims to track the movement of detected objects in a single frame all the way through subsequent video frames using Detectron2. I downloaded, unzipped and used a short video clip made up of 41 images of vehicles on the road to make predictions using of the experience from Lab1.

B. Tracking Objects in Pairs of Frames

The goal here is to use two consecutive images to track the movement of objects in frames. I calculated the Intersection Over Union(IoU) to find the overlaps between frames which indicated where the object is going and hence, monitored the tracking. I tracked using the first two frames, the middle and finally the last two frames to visualize the overlap-pings.



Fig. 1. Tracking objects in the first two frames



Fig. 2. Tracking objects in the middle frames



Fig. 3. Tracking objects in the last two frames

C. Tracking Objects in Videos

Part C focuses on tracking objects in a sequence of frames and implementing that means the visualizer must assign a tracking number to each detected object with a unique color. Below is a few images from the output of the visualizer.



Fig. 4. Tracking objects in video with unique color and tracking number



Fig. 5. Tracking objects in video with unique color and tracking number



Fig. 6. Tracking objects in video with unique color and tracking number

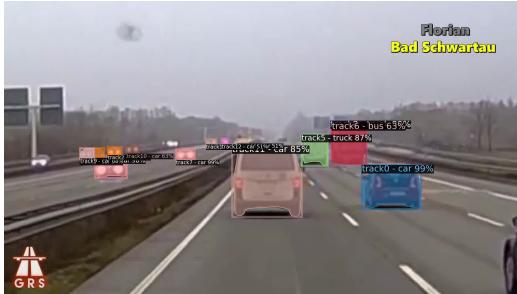


Fig. 7. Tracking objects in video with unique color and tracking number

D. Conclusion

Observations from part-B indicated that visualizing 2 frames at a time is a little difficult to track when the movements of the object is at the fast pace, and the colors were not stable as well. On the other hand, visualizing part-C indicated that tracking more frames shows a smooth transition in the movements and the color of the are visible through the process

REFERENCES

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- [3] <https://github.com/facebookresearch/detectron2/blob/master/>
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