

PhD

**Online multi-object tracking with dual matching attention networks
1902.00749 eccv18**

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Incremental improvement on the spatio-temporal attention network paper

Replaces the visibility map by dual spatial attention maps – one each for the tracked box and the detection that is being compared

Also improves temporal attention by comparing the detection with the entire tracklet to decide on the consistency between them using bidirectional LSTM to integrate features from the spatial attention network between the detection and each constituent box in the tracklet

Trajectory management seems to be pretty much the same and also the same as MDP

The efficient convolutional operators (ECO) tracker with handcrafted HOG and colour names features is used as the base tracker with the only improvement being a slightly modified loss that gives more weight to hard negative samples using some dubious weighting factor

as in the original paper, the modified loss function is optimized using conjugate gradient so there seems to be no deep learning involved at all the tracking part

Marginal improvements over the updated MDP in some of the metrics with significant decreases in several others especially false positives where it increases from 2600 to 7900 which might be only partially attributable to this tracker itself since the updated MDP has much lower false positives than all other compared trackers

Implemented in Matlab and tensor flow and the code is apparently actually available