PhD

Eliminating Exposure Bias and Metric Mismatch in Multiple Object Tracking cvpr19

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Seems to be a minor extension of the bilinear LSTM/multiple hypothesis tracker

Exposure bias supposedly reduced by considering more of the detections for generating tracklets while avoiding exponential combinatorial explosion by using a bunch of heuristics to exclude tracklets

tracklet creation and merging process uses a bunch of heuristics based on the cumulative IOU and score with hard thresholds
There is some sort of greedy pruning process where excessive merging is followed by retaining only a single tracklet that maximizes to score

Metric mismatch supposedly avoided by using a tracklet similarity scoring function that approximates IDF though the approximation itself seems to be dubious and involves predicting the IOU between a detection and GT as well as the probability of GT being in a frame which are then integral part of the scoring function

scoring network also has bounding box refinement output and the overall loss seems to be a simple sum of the three losses corresponding to its three outputs

Direct regression to IDF is not done for the empirical observation that using this indirect they force as it to learn more detailed relationships and better understand motion while high IDF can allegedly be produced with poorer prediction as well

Some sort of iterative two-step training procedure used where network training and Training hypothesis generation are alternated

Performance results reported both with and without appearance features and seem to be merely comparable to the state of the art