

Robust Multi-Object Tracking by Marginal Inference

Yifu Zhang^{1†}, Chunyu Wang², Xinggang Wang¹, Wenjun Zeng³, and Wenyu Liu^{1‡}

¹ Huazhong University of Science and Technology

² Microsoft Research Asia

³ Eastern Institute for Advanced Study

A Distance distribution of each sequence

We plot the distance distribution for each video in the half validation set of MOT17 [1] to validate the robustness of the proposed marginal probability. Figure 1 shows the distance distribution of the Re-ID feature distance obtained by FairMOT [2]. Figure 2 shows the distance distribution of marginal probability. From Figure 1 we can see that the threshold between the matched and unmatched pairs vary from 0.2 to 0.4. The distance distribution also varies significantly in different videos. From Figure 2 we can see that the thresholds are all around 0.8 and the distribution is almost the same in different videos, which indicates that marginal probability is more robust than feature distance.

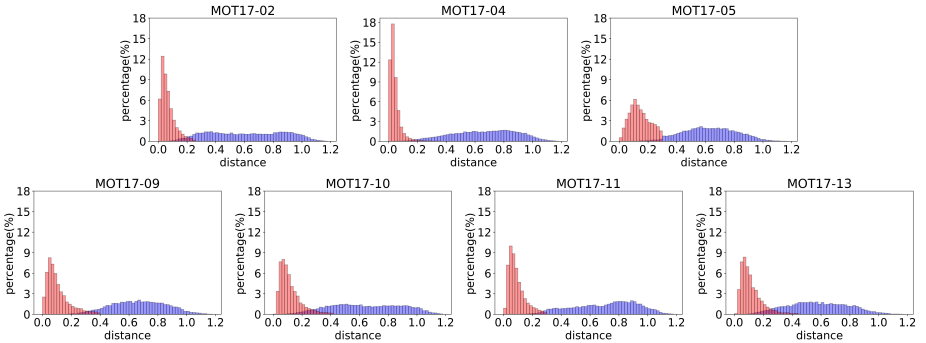


Fig. 1. Distance distribution of the matched pairs and unmatched pairs, respectively, on all seven videos in the half validation set of MOT17. The distance is computed by the Re-ID feature distance obtained by FairMOT.

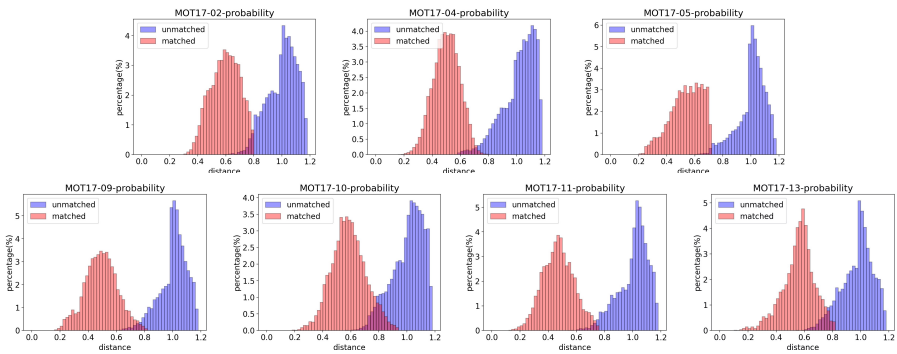


Fig. 2. Distance distribution of the matched pairs and unmatched pairs, respectively, on all seven videos in the half validation set of MOT17. The distance is computed by the marginal probability.

References

1. Milan, A., Leal-Taixé, L., Reid, I., Roth, S., Schindler, K.: Mot16: A benchmark for multi-object tracking. arXiv preprint arXiv:1603.00831 (2016) [1](#)
2. Zhang, Y., Wang, C., Wang, X., Zeng, W., Liu, W.: Fairmot: On the fairness of detection and re-identification in multiple object tracking. *International Journal of Computer Vision* **129**(11), 3069–3087 (2021) [1](#)