

Abstract: Multiple-object Tracking by Online-hybrid Boosting and Conditional Random Field

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Abstract

In this paper, we propose a new data association technique with a Conditional random field (CRF) and Online-hybrid boosting for multiple-object tracking. In our work, we design a new hybrid boosting algorithm, namely Online-hybrid boosting and a special CRF model for data association. The existing data association techniques based on the boost algorithms had difficulties in implementing online multiple-object tracking, due to the necessity of training set such as ground truth. However, our proposed system can track objects in video sequences online by applying CRF in the data association technique. Also, the data association in designed system is hierarchical, which improves tracking accuracy. Experimental results indicate that our proposed system outperforms other state-of-the-art tracking systems.

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