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# Pedestrian Detection in Crowded Scenes

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## ABSTRACT

In this paper, we address the problem of detecting pedestrians in crowded real-world scenes with severe overlaps. Our basic premise is that this problem is too difficult for any type of model or feature alone. Instead, we present a novel algorithm that integrates evidence in multiple iterations and from different sources. The core part of our method is the combination of local and global cues via a probabilistic top-down segmentation. Altogether, this approach allows to examine and compare object hypotheses with high precision down to the pixel

level. Qualitative and quantitative results on a large data set confirm that our method is able to reliably detect pedestrians in crowded scenes, even when they overlap and partially occlude each other. In addition, the flexible nature of our approach allows it to operate on very small training sets.

## INDEX TERMS

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