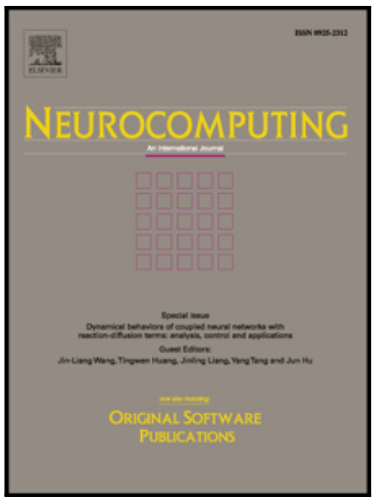

Natural Scene Text Detection with MC-MR Candidate Extraction and Coarse-to-Fine Filtering

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Abstract. A novel natural scene text detection method is proposed in this paper. In the proposed method, first, we extract MSERs as text candidates with a proper multi-channel and multi-resolution Maximally Stable Extremal Regions (MC-MR MSER) strategy. Then, we design a coarse-to-fine character classifier to discard false-positive candidates, where the coarse filter is based on morphological features and the fine filter is well-trained by convolutional neural network. Finally, text strings are formed with a graph model on detected characters. The proposed method is evaluated on ICDAR 2013 Robust Reading Competition benchmark database and the practical challenging multi-orientation scene text database (USTB) with standard rules. Experimental results show our method is efficient and effective. It achieves F-Score at 83.84% on ICDAR 2013 database and 51.15% on the more challenging USTB database, which are superior over several state-of-the-art text detection methods.

Key words: Scene text detection, multi-channel and multi-resolution, Maximally Stable Extremal Regions, coarse-to-fine character classifier