



Text proposals with location-awareness-attention network for arbitrarily shaped scene text detection and recognition

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Highlights

- An end-to-end unified method is proposed for text detection and recognition.
- Predicting central mask of text instance for locating text region.
- Regression and mask prediction are performed for accurate position of text region.
- A local-awareness network-based model is proposed to recognize characters.
- Experimental results attest to the effectiveness of the proposed method.

Abstract

Unlike existing models that aim to address the challenge of scene text detection and recognition separately, the proposed work aims to address both text detection and recognition using a single architecture to deal with arbitrarily oriented/shaped text. Towards this aim, a novel Text Proposal with Location-Awareness-Attention Network (TPLAANet) for arbitrarily oriented/shaped text detection and recognition is proposed. For text detection, the proposed method explores central

mask prediction for locating text instances, bounding box regression branch for tight bounding boxes, and mask branch for accurate positions of arbitrarily oriented/shaped text instances. For text recognition, the proposed method explores character information using a Location-Awareness-Attention Network (LAAN), which learns a two-dimensional attention weight and improves the recognition performance. To test the efficacy of the proposed model, we consider the commonly used horizontal and multi-oriented natural scene text datasets, namely, ICDAR2013, ICDAR2015, and the arbitrarily shaped scene text datasets, namely, Total-Text and CTW1500 for experimentation. Experimental results are provided to validate the effectiveness of the proposed method. The code is available at: <https://codeocean.com/capsule/5666319/tree/v1>.

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Keywords

Scene text detection; Scene text recognition; Text proposal; Attention model; Location-awareness-attention model

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