CDD Model: A Cylinder Detector and Dewarper

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Perspective transformation and edge detection are fundamental and important problems in the field of computer vision. This paper proposed a fast and adaptable method, CDD, to perform the detection and transformation of cylinders in images. In addition, in the cases that the cylinders are book pages, we optimized our model in the detection part, enabling the whole process to be automatic. Compared to other methods proposed, our model (CDD) has the features of shooting-angle-independent and content-independent. According to our experiment, after using CDD model, the OCR accuracy improved from 21.43% to 84.97% in average. Besides, the low computing power requirement of our model enabled us to implement the method on mobile terminals and embedded devices, and a demo app on iOS platform has been deployed.

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