Comprehensive Experimental Evaluation of Open Source Deep Learning Framework for Single Image Deraining Applications

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Abstract:
The presence of rain patterns degrades the visual quality of the outdoor captured image for human perception and affects the performance of computer vision systems. Recently, deep learning algorithms have given more attention to single image/video deraining applications. Several open-source Deep Learning(DL) frameworks are available to assess the performance of existing Deraining deep network algorithms. In general, increasing popularity of more open source DL frameworks, it is necessary to identify the best platform for single image deraining applications in terms of prediction accuracy, CPU optimization, convergence factor and, Memory usage. In this work, a comprehensive survey has been presented and summarized to identify the best open-source tool for deraining applications. In this paper, we conduct numerous experimental analyses of four popular DL frameworks, namely Tensorflow, Pytorch, Caffe, Keras using JORDER and Derain SRCNN deraining architecture. Various experiments have been conducted on two CPU platforms using a different rainy database. The Experimental results show that Tensorflow and Pytorch offer a better draining performance for DerainSRCNN and JORDER Deraining Network.

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