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Comprehensive evaluation of blind single image deblurring algorithms on real-world blurs

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### **Abstract**

In literature, several approaches have been used to evaluate the performance of deblurring algorithms on synthetically generated image datasets. The used image datasets only consist of motion-blurred images and do not consider depth variation. The challenge is that real-world blurred images consist of other types of blurs such as defocus blur and depth variation. This paper addresses this challenge by quantitatively evaluating the performance of recent optimization-based and learning-based deblurring algorithms on a real-world blurred image dataset. The used dataset consists of different types of blurs and considers depth variation. Experimental results show that deblurring algorithms do not perform well on real image blurs of natural images, people, and text. Also, optimization-based algorithms perform better than learning-based algorithms. However, optimization-based algorithms are slow. As such, they can be prohibitive for real-time applications. The experimental results also reveal the inconsistent performances of the algorithms on widely used benchmark deblurring image datasets.