

Blur is among the most common degradations encountered in image acquisition. In computer vision tasks, it greatly reduces the success rate of any recognition method. In the handcrafted methods space blur is mostly handled by restoration - via deblurring, blur-invariant descriptors or blur invariant distances. In deep learning, degradations are almost exclusively dealt with by augmenting the training dataset. This doctoral Thesis covers three out of the four areas - it expands and generalize moment-based blur invariants, introduces new blur invariant measure and proposes a novel convolutional network architecture which is invariant to degradations alleviating the need for dataset augmentation.