

Augmentation overview and performance

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The purpose of this report is to compare different augmentation techniques for images.

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Albumentation

[Albumentations](#) is a Python library for fast and flexible image augmentations. Albumentations efficiently implements a rich variety of image transform operations that are optimized for performance, and does so while providing a concise, yet powerful image augmentation interface for different computer vision tasks, including object classification, segmentation, and detection.

Resources

Documentation

Benchmarking

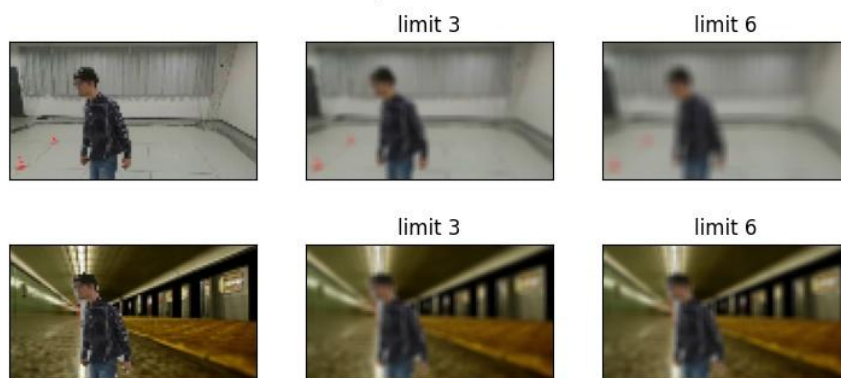
Demo

Usage with Keras

List of considered augmentations

Blur

Blur (0.50sec per 10000 iterations)



ChannelDropout

ChannelDropout (0.42sec per 10000 iterations)



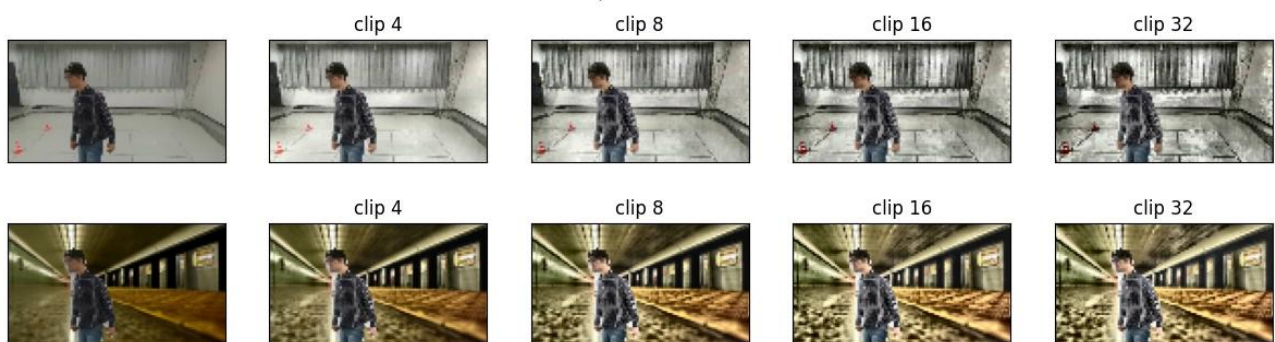
ChannelShuffle

ChannelShuffle (0.34sec per 10000 iterations)



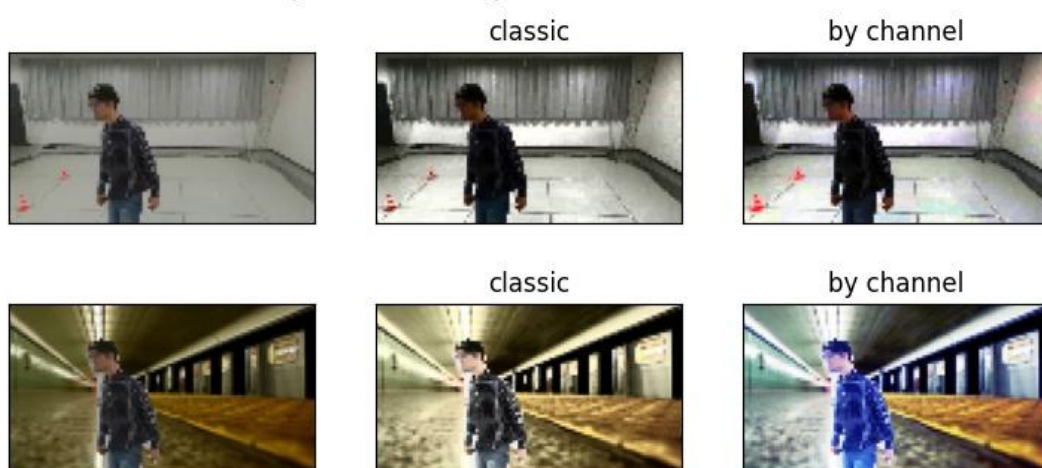
CLAHE

CLAHE (3.50sec per 10000 iterations)

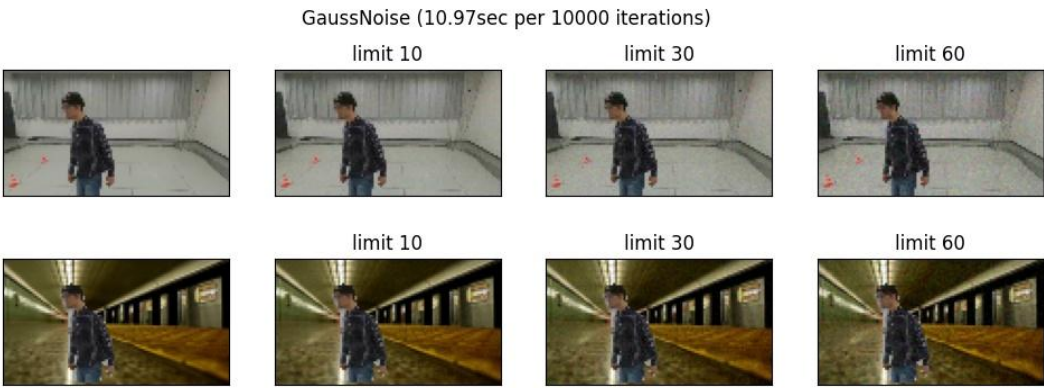


Equalize

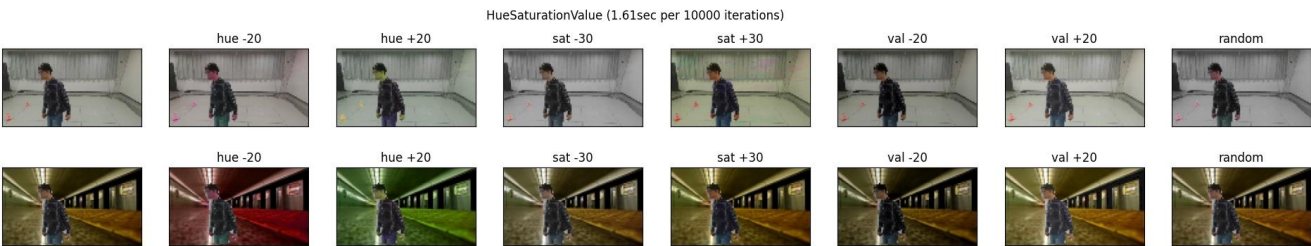
Equalize (0.66sec per 10000 iterations)



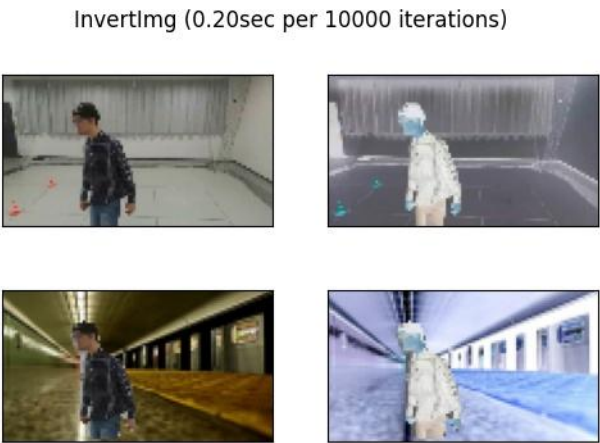
GaussNoise



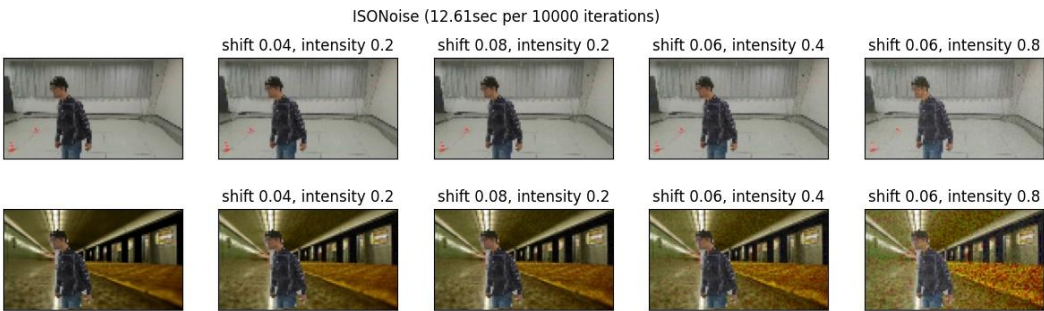
HueSaturationValue



InvertImg



ISONoise



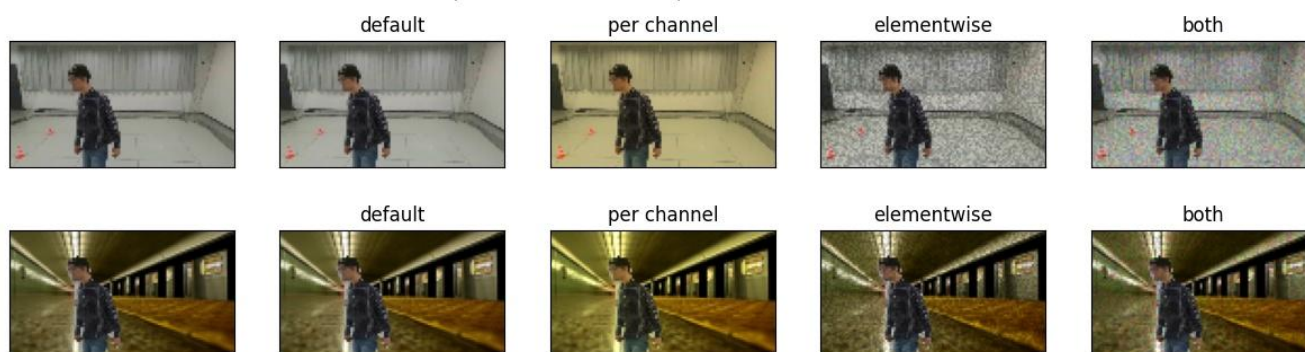
MotionBlur

MotionBlur (0.73sec per 10000 iterations)



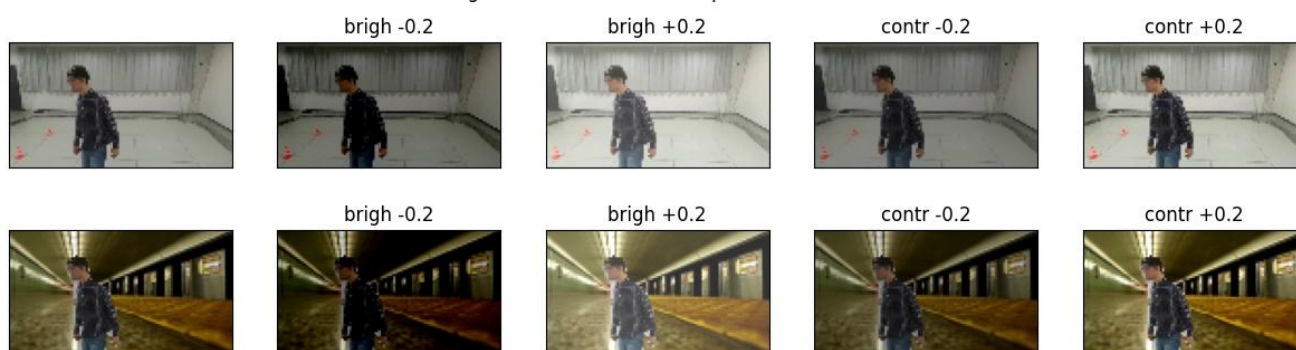
MultiplicativeNoise

MultiplicativeNoise (5.48sec per 10000 iterations)



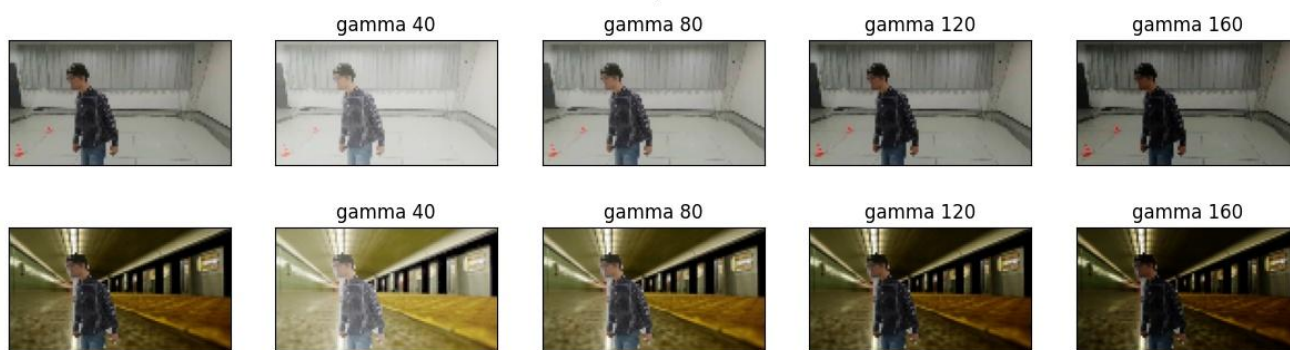
RandomBrightnessContrast

RandomBrightnessContrast (0.62sec per 10000 iterations)



RandomGamma

RandomGamma (0.50sec per 10000 iterations)



RGBShift

RGBShift (1.53sec per 10000 iterations)



Solarize

Solarize (0.58sec per 10000 iterations)



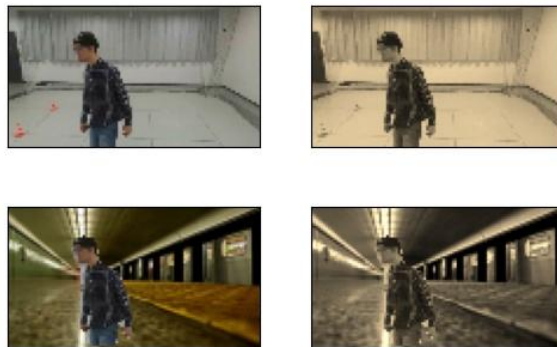
ToGray

ToGray (0.22sec per 10000 iterations)



ToSepia

ToSepia (0.72sec per 10000 iterations)



Other augmentations

List of all possible pixel-level augmentations

<https://github.com/albumentations-team/albumentations#pixel-level-transforms>