

Full Image restoration [and some games with a single gaussian]

Haggai Maron & Tal Amir

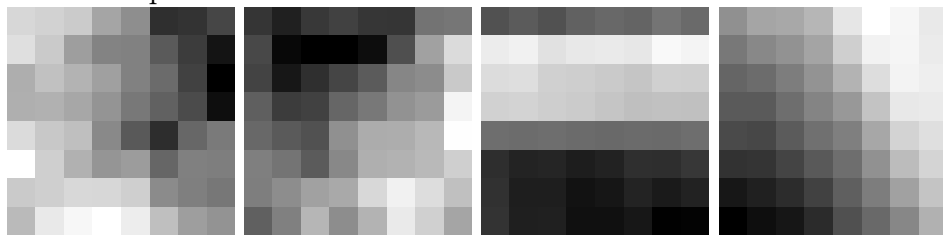
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1 Weekness of one Gaussian model

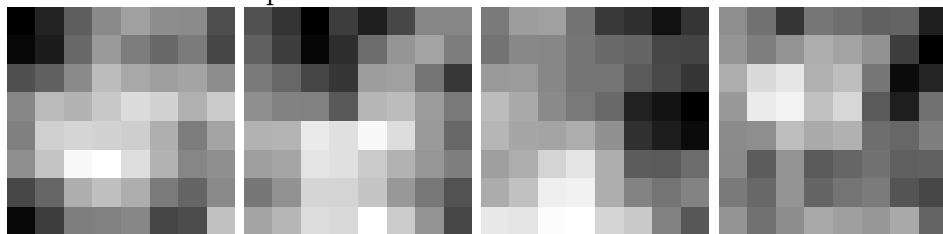
What can we model if we use only one Gaussian? how does it compare to the 200 Gaussians model? We will check this in 2 ways:

1. Compare random patches that are generated from 1 Gaussian Distribution vs. 200 Gaussina Distribution:

MOG samples:



One Gaussian Sample:

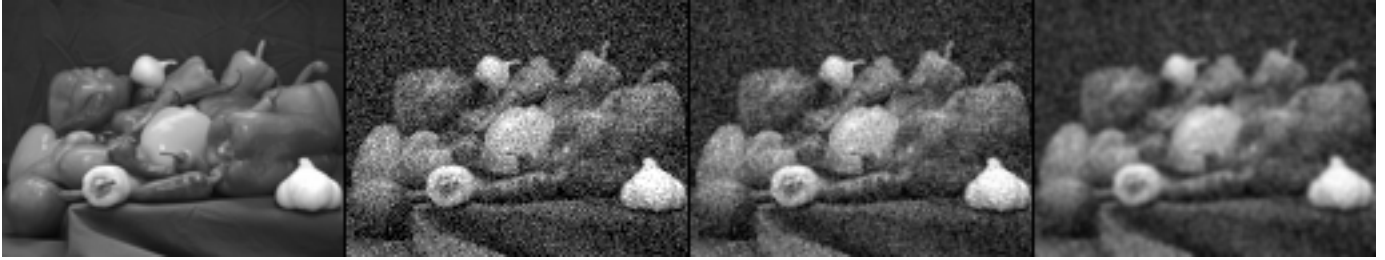


Results

It is quite clear that there are pure directed textures such as lines in the MoG samples, while the samples from the single Gaussian distribution possess these textures.

2. Clean the same patch with the two model and check the difference in the PSNR:

2 Full Image denoising



noisy psnr=22.1104 noisy rmse=19.9996 denoised psnr=25.8107 denoised rmse=13.0619 filtered
psnr=26.0458 filtered rmse=12.7131

Another example:

noisy psnr=22.4789 noisy rmse=19.1689 denoised psnr=25.6765 denoised rmse=13.2653 filtered
psnr=24.1597 filtered rmse=15.7963