

CS663 Assignment 3

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Question 3

Here are the original and the noisy versions of the images:

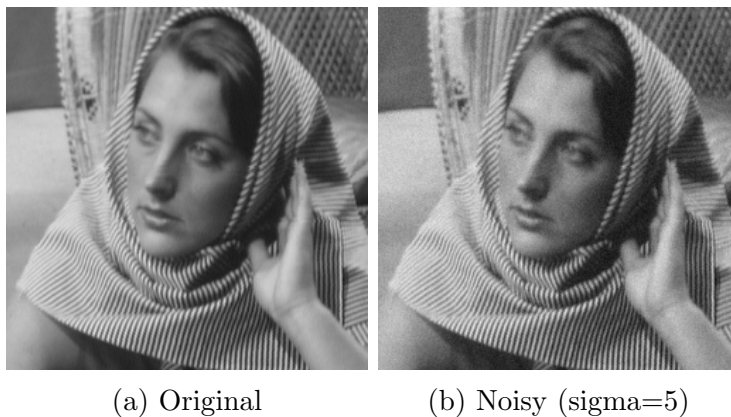


Figure 1: Versions of barbara image

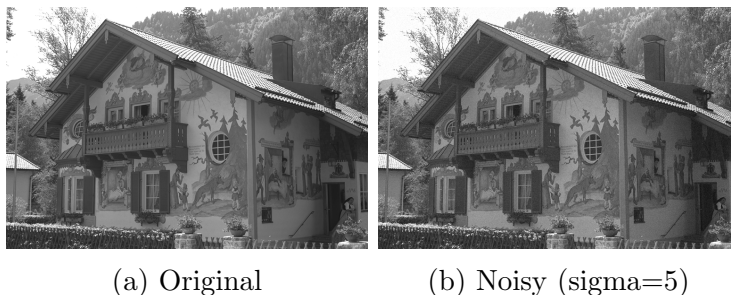


Figure 2: Versions of kodak image

The code for this question is present in `../code/myMainScript.m`, `../code/mybilateralfilter.m` and `../code/mymeanshiftfilter.m`. The window size of the bilateral filter and the meanshift filter is chosen to be $2 \times [3 * \sigma_s] + 1$, where $\lceil \cdot \rceil$ denotes the ceiling function.

Here are the results of applying bilateral filter on noisy ($\sigma = 5$) barbara image with various values of σ_s and σ_r :

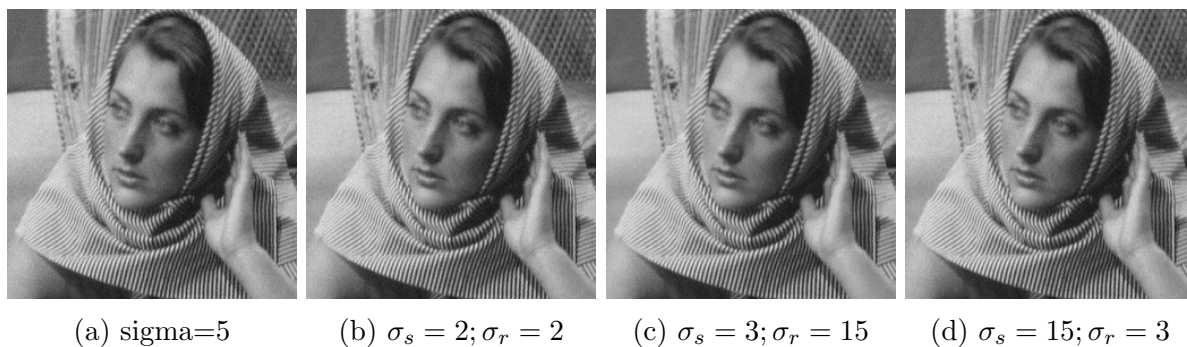


Figure 3: Bilateral Versions of barbara image (sigma=5)

Here are the results of applying mean-shift filter on noisy ($\sigma = 5$) barbara image with various values of σ_s and σ_r :

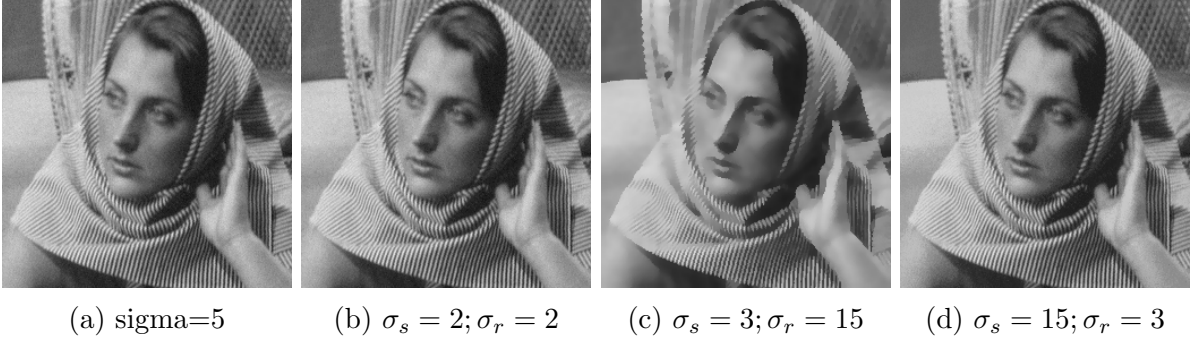


Figure 4: Mean-shift Versions of kodak image (sigma=5)

Here are the results of applying bilateral filter on noisy ($\sigma = 5$) kodak image with various values of σ_s and σ_r :

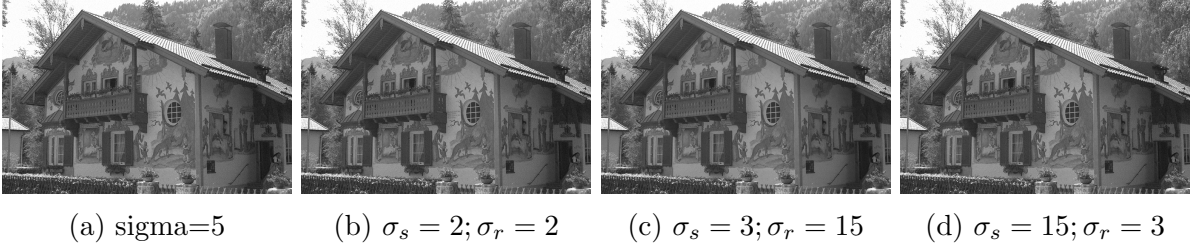


Figure 5: Bilateral Versions of kodak image (sigma=5)

Here are the results of applying mean-shift filter on noisy ($\sigma = 5$) kodak image with various values of σ_s and σ_r :

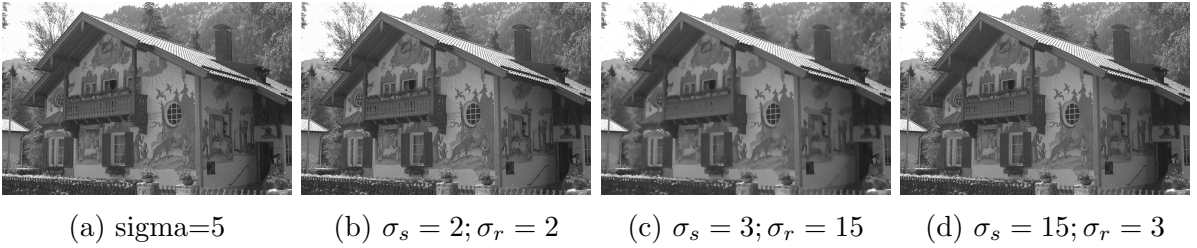


Figure 6: Mean-shift Versions of kodak image (sigma=5)