

Q3 Edge-preserving Smoothing using Patch-Based Filtering.

Pranav Sankhe 150070009
Kalpesh Krishna 140070017
Mohit Madan 15D070028

Report:

Resized the image by subsampling by a factor of 2 along each dimension, after applying a Gaussian blur of standard deviation around 0.66 pixel width.

Window Size = 25*25

Patch size = 9*9

Here are the results for `sigmaSpatial = 1.5` and `sigmaIntensity = 1.5`:



Figure 1: Original, corrupted and filtered images.



Figure 2: Mask used to make patches isotropic.

Optimal parameter values are as follows:

`sigmaSpatial` = 1.5

`sigmaIntensity` = 1.5

RMSD for the optimal parameter is 0.017

RMSD for $1.1 * \sigma = 0.210$

RMSD for $0.9 * \sigma = 0.0129$