

# Report

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Generate noisy images with gaussian noise(amplitude of 10)



Generate noisy images with gaussian noise(amplitude of 30)



box3x3→



box5x5→



median3x3→



median5x5→



opening-then-closing→



closing-then-opening→



Generate noisy images with salt-and-pepper noise( probability 0.1)



box3x3→



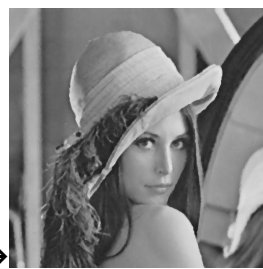
box5x5



median3x3→



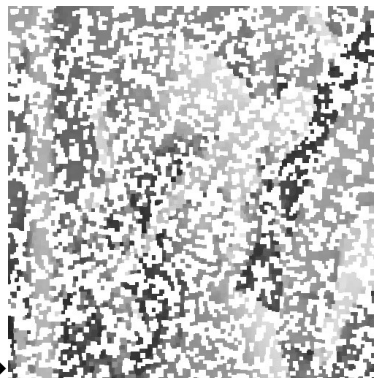
median5x5→



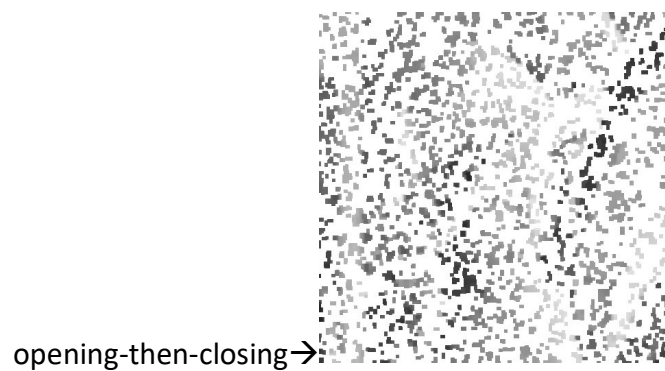
opening-then-closing→



closing-then-opening→



Generate noisy images with salt-and-pepper noise( probability 0.05)



## signal-to-ratio (SNR)

### (a 10)

img\_Gnoise10 SNR = 13.598124  
img\_Gnoise10\_box3x3 SNR = 17.741583  
img\_Gnoise10\_box5x5 SNR = 14.859557  
img\_Gnoise10\_median3x3 SNR = 17.664867  
img\_Gnoise10\_median5x5 SNR = 16.007159  
img\_Gnoise10\_otclosing SNR = 12.644398  
img\_Gnoise10\_ctopenning SNR = 12.992012

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### (a 30)

img\_Gnoise30 SNR = 4.174918  
img\_Gnoise30\_box3x3 SNR = 12.616844  
img\_Gnoise30\_box5x5 SNR = 13.320017  
img\_Gnoise30\_median3x3 SNR = 11.088172  
img\_Gnoise30\_median5x5 SNR = 12.930441  
img\_Gnoise30\_otclosing SNR = 0.962625  
img\_Gnoise30\_ctopenning SNR = 10.802684

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### (b 0.1)

img\_Normal\_01 SNR = -2.106530  
img\_Normal\_01\_box3x3 SNR = 6.346372  
img\_Normal\_01\_box5x5 SNR = 8.532561  
img\_Normal\_01\_median3x3 SNR = 15.126613  
img\_Normal\_01\_median5x5 SNR = 15.747482  
img\_Normal\_01\_otclosing SNR = -0.189519  
img\_Normal\_01\_ctopenning SNR = -3.167745

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### (b 0.05)

img\_Normal\_005 SNR = 0.918760  
img\_Normal\_005\_box3x3 SNR = 9.455218  
img\_Normal\_005\_box5x5 SNR = 11.144098  
img\_Normal\_005\_median3x3 SNR = 19.206297  
img\_Normal\_005\_median5x5 SNR = 16.384037  
img\_Normal\_005\_otclosing SNR = -2.957315  
img\_Normal\_005\_ctopenning SNR = 2.657247