Locally Adaptive Channel Attention-based Network for Denoising Images

– Additional Examples –
Noise Level $\sigma = 25$

Clean (PSNR/SSIM)

Noisy image (20.14/0.3585)

BM3D [1] (28.93/0.8528)

TNRD [2] (29.18/0.8573)

DnCNN-B [3] (29.35/0.8618)

DnCNN [3] (29.43/0.8648)

N3Net [4] (29.44/0.8651)

NLRN [5] (**29.65**/0.8674)

CANDI-B (29. 42/0.8675)

LACANDI-B (29.34/0.8640)

CANDI (29.58/0.8700)

LACANDI (29.60/**0.8712**)

Clean (PSNR/SSIM)

Noisy image (20.23/0.2934)

BM3D [1] (30.33/0.8364)

TNRD [2] (30.43/0.8406)

DnCNN-B [3] (30.69/0.8519)

DnCNN [3] (30.74/0.8527)

N3Net [4] (30.74/0.8563)

NLRN [5] (30.91/0.8574)

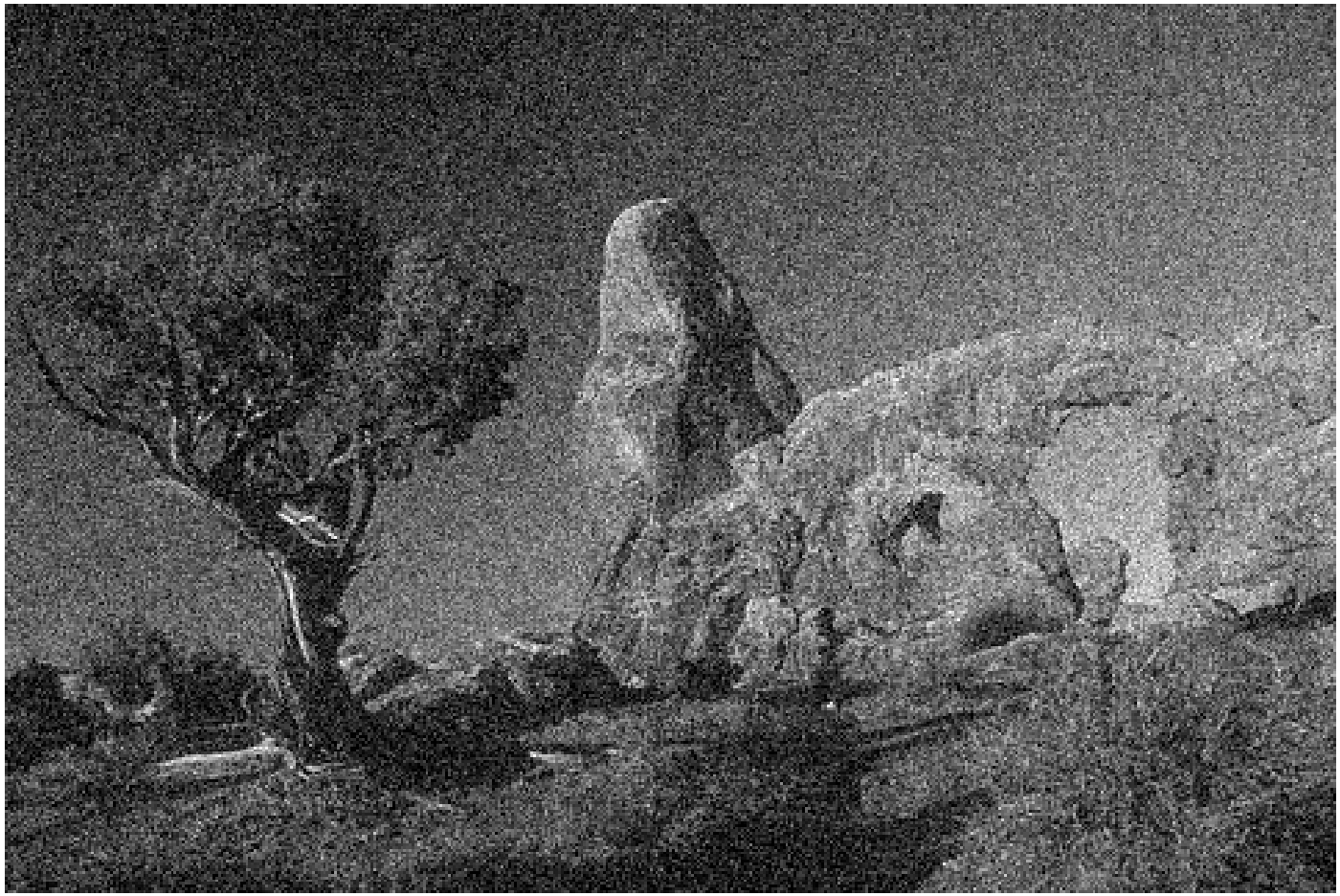
CANDI-B (30.87/0.8579)

CANDI-B (30.88/0.8595)

CANDI (30.92/0.8610)

LACANDI (**30.93/0.8613**)

Clean (PSNR/SSIM)



Noisy image (20.30/0.3419)

BM3D [1] (27.58/0.7675)

TNRD [2] (28.16/0.8040)

DnCNN-B [3] (28.37/0.8182)

DnCNN [3] (28.37/0.8182)

N3Net [4] (28.37/0.8209)

NLRN [5] (**28.44**/0.8192)

CANDI-B (28.38/0.8162)

LACANDI-B (28.40/0.8196)

CANDI (28.43/0.8248)

LACANDI (28.43/**0.8248**)

Clean (PSNR/SSIM)

Noisy image (20.23/0.1351)

BM3D [1] (36.91/0.9503)

TNRD [2] (37.80/0.9587)

DnCNN-B [3] (38.23/0.9620)

DnCNN [3] (38.45/0.9643)

N3Net [4] (38.36/0.9682)

NLRN [5] (38.40/0.9638)

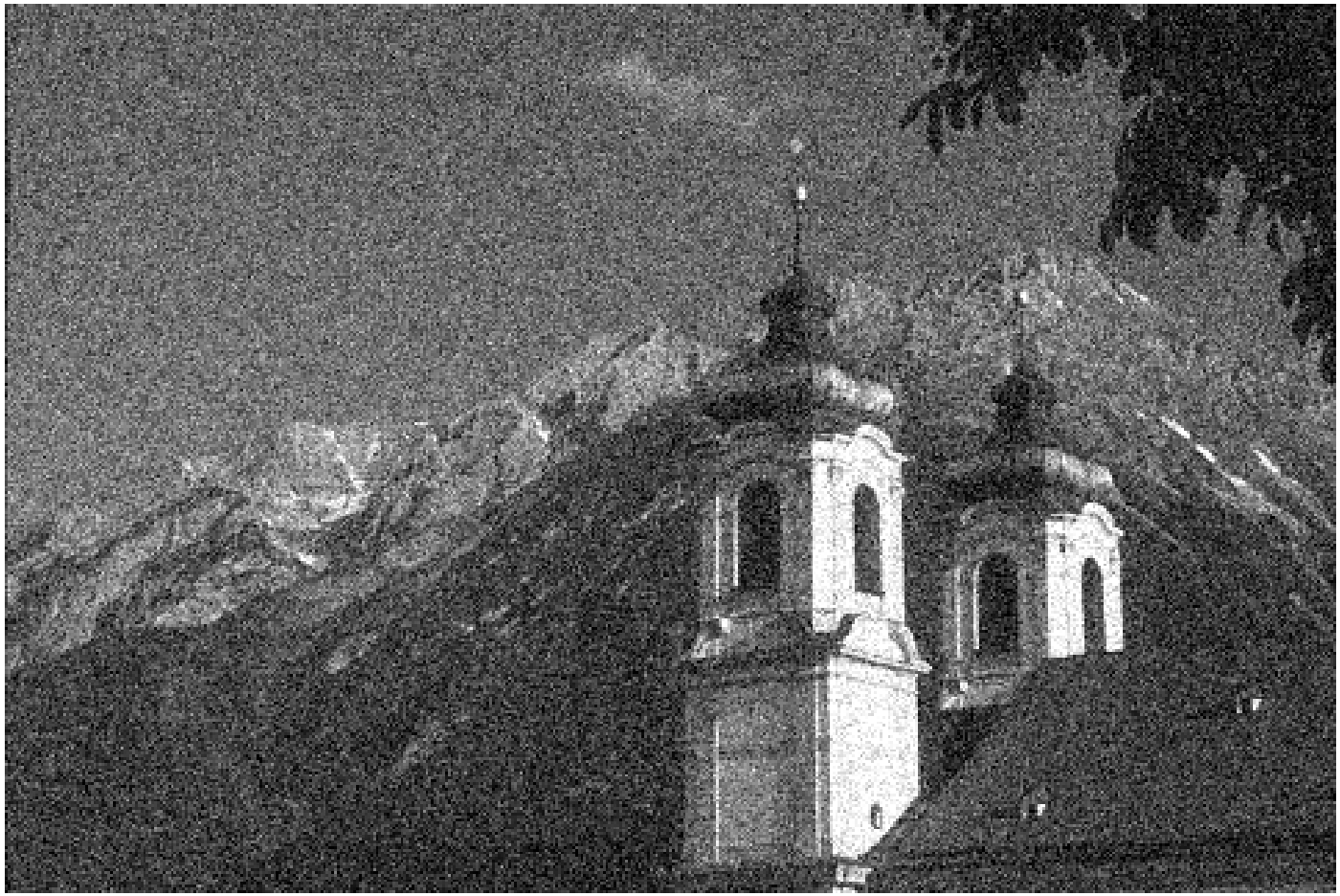
CANDI-B (38.61/0.9695)

LACANDI-B (38.61/0.9691)

CANDI (38.72/**0.9701**)

LACANDI (**38.73**/0.9700)

Clean (PSNR/SSIM)



Noisy image (20.31/0.2824)

BM3D [1] (30.16/0.8342)

TNRD [2] (30.68/0.8474)

DnCNN-B [3] (30.99/0.8567)

DnCNN [3] (31.01/0.8575)

N3Net [4] (31.03/0.8613)

NLRN [5] (31.13/0.8626)

CANDI-B (31.16/0.8631)

LACANDI-B (31.15/0.8635)

CANDI (31.19/0.8648)

LACANDI (**31.19/0.8648**)

Clean (PSNR/SSIM)

Noisy image (20.82/0.2218)

BM3D [1] (32.47/0.8514)

TNRD [2] (32.67/0.8565)

DnCNN-B [3] (33.00/0.8671)

DnCNN [3] (32.98/0.8674)

N3Net [4] (33.01/0.8712)

NLRN [5] (**33.21/0.8718**)

CANDI-B (33.06/0.8706)

LACANDI-B (33.07/0.8714)

CANDI (33.04/0.8708)

LACANDI (33.05/0.8713)

Clean (PSNR/SSIM)

Noisy image (20.18/0.2676)

BM3D [1] (32.07/0.8606)

TNRD [2] (32.00/0.8591)

DnCNN-B [3] (32.42/0.8696)

DnCNN [3] (32.44/0.8696)

N3Net [4] (32.54/0.8736)

NLRN [5] (**32.81**/**0.8771**)

CANDI-B (32.62/0.8746)

LACANDI-B (32.62/0.8747)

CANDI (32.68/0.8758)

LACANDI (32.65/0.8751)

Reference

[1] K. Dabov, A. Foi, V. Katkovnik, and K. Egiazarian. Image denoising by sparse 3-d transform-domain collaborative filtering. IEEE Transactions on image processing, 16(8):2080–2095, 2007.

[2] Y. Chen and T. Pock. Trainable nonlinear reaction diffusion: A flexible framework for fast and effective image restoration. IEEE transactions on pattern analysis and machine intelligence, 39(6):1256–1272, 2017.

[3] K. Zhang, W. Zuo, Y. Chen, D. Meng, and L. Zhang. Beyond a Gaussian denoiser: Residual learning of deep cnn for image denoising. IEEE Transactions on Image Processing, 26(7):3142–3155, 2017.

[4] T. Plotz and S. Roth. Neural nearest neighbors networks. In Advances in Neural Information Processing Systems, pages 1095–1106, 2018.

[5] D. Liu, B. Wen, Y. Fan, C. C. Loy, and T. S. Huang. Nonlocal recurrent network for image restoration. arXiv preprint arXiv:1806.02919, 2018.