

Locally Adaptive Channel Attention-based Network for Denoising Images

– Additional Examples –
Noise Level $\sigma = 15$



Clean (PSNR/SSIM)



Noisy image (24.61/0.5713)



BM3D [1] (28.40/0.5990)



TNRD [2] (28.93/0.6693)



DnCNN-B [3] (28.70/0.6374)



DnCNN [3] (29.26/0.7081)



NLRN [4] (**29.36**/0.7117)



CANDI-B (29.27/0.7117)



LACANDI-B (29.21/0.7043)



CANDI (29.28/0.7141)



LACANDI (29.29/0.7146)



Clean (PSNR/SSIM)



Noisy image (24.71/0.5986)



BM3D [1] (30.42/0.8477)



TNRD [2] (30.79/0.8596)



DnCNN-B [3] (30.95/0.8662)



DnCNN [3] (31.05/0.8689)



NLRN [4] (31.11/0.8698)



CANDI-B (31.08/0.8700)



LACANDI-B (31.07/0.8700)



CANDI (31.11/0.8719)



LACANDI (31.12/0.8723)



Clean (PSNR/SSIM)



Noisy image (24.97/0.4126)



BM3D [1] (34.66/0.9160)



TNRD [2] (34.95/0.9226)



DnCNN-B [3] (35.21/0.9290)



DnCNN [3] (35.28/0.9300)



NLRN [4] (**35.45**/0.0.9307)



CANDI-B (35.34/0.9314)



LACANDI-B (35.38/0.9331)



CANDI (35.36/0.9329)



LACANDI (35.38/**0.9333**)



Clean (PSNR/SSIM)



Noisy image (24.78/0.5601)



BM3D [1] (30.21/0.8617)



TNRD [2] (30.51/0.8731)



DnCNN-B [3] (30.59/0.8703)



DnCNN [3] (30.83/0.8837)



NLRN [4] (30.94/0.8857)



CANDI-B (30.79/0.8824)



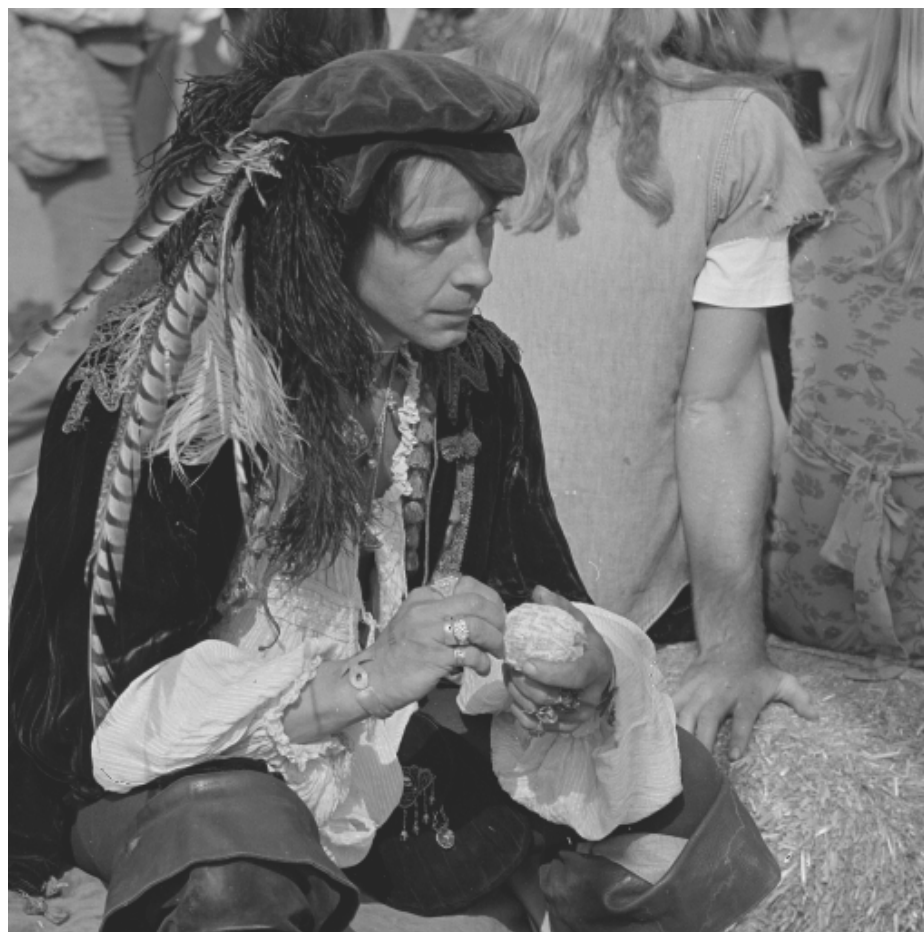
LACANDI-B (30.78/0.8835)



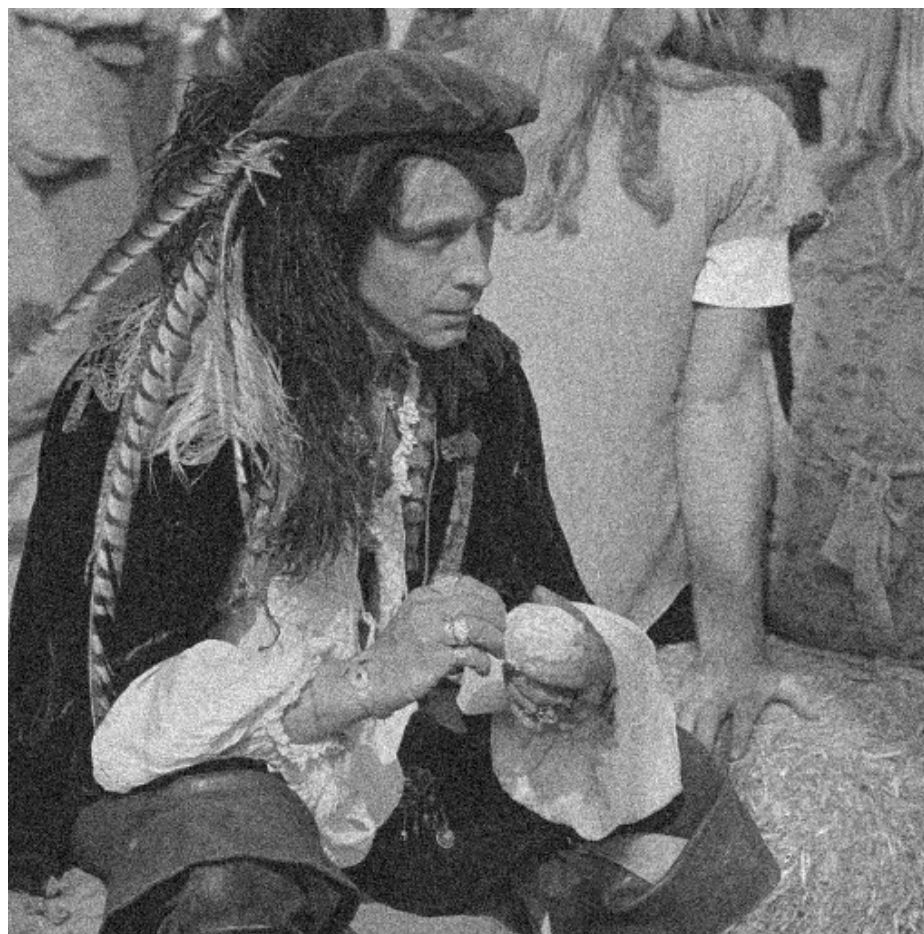
CANDI (30.88/0.8867)



LACANDI (30.91/**0.8877**)



Clean (PSNR/SSIM)



Noisy image (24.62/0.5215)



BM3D [1] (31.92/0.8664)



TNRD [2] (32.23/0.8736)



DnCNN-B [3] (32.41/0.8790)



DnCNN [3] (32.46/0.8802)



NLRN [4] (32.53/0.8813)



CANDI-B (32.43/0.8808)



LACANDI-B (32.44/0.8811)



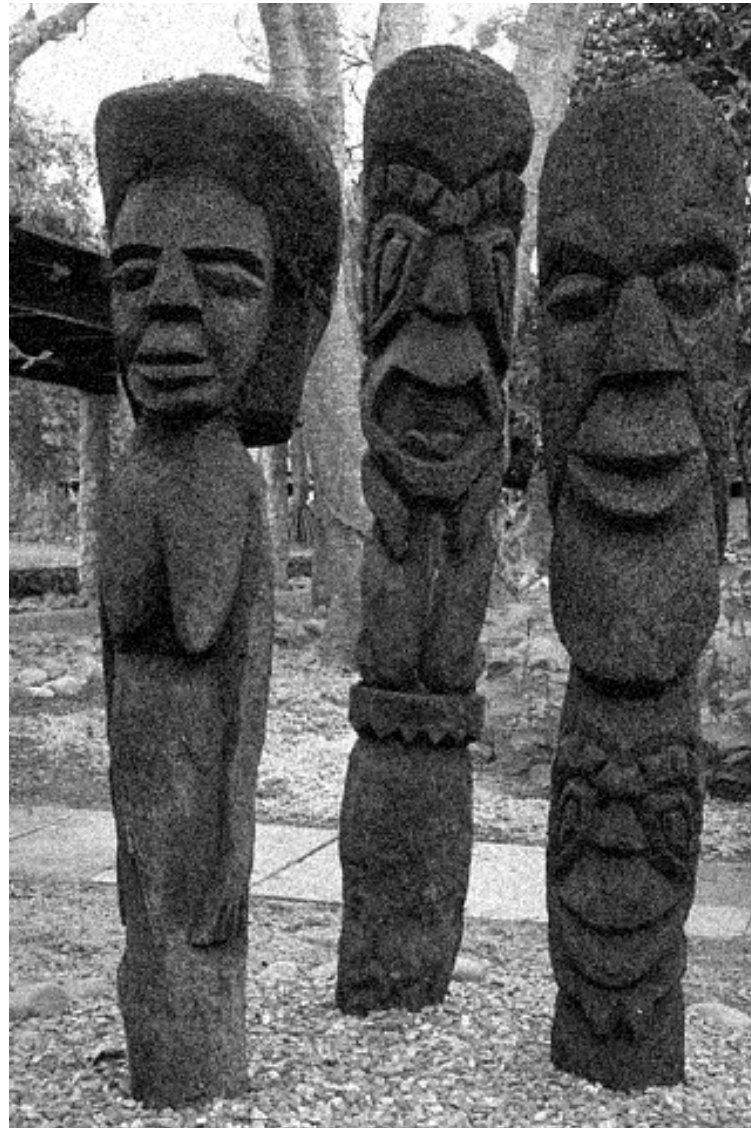
CANDI (32.46/0.8825)



LACANDI (32.47/**0.8827**)



Clean (PSNR/SSIM)



Noisy image (24.80/0.7331)



BM3D [1] (27.90/0.8016)



TNRD [2] (28.19/0.8224)



DnCNN-B [3] (28.22/0.8143)



DnCNN [3] (28.43/0.8347)



NLRN [4] (28.48/0.8368)



CANDI-B (28.37/0.8248)



LACANDI-B (28.32/0.8205)



CANDI (28.47/0.8381)



LACANDI (28.48/0.8385)



Clean (PSNR/SSIM)



Noisy image (25.26/0.5630)



BM3D [1] (30.87/0.8677)



TNRD [2] (31.25/0.8785)



DnCNN-B [3] (31.36/0.8833)



DnCNN [3] (31.45/0.8859)



NLRN [4] (31.57/0.8882)



CANDI-B (31.53/0.8879)



LACANDI-B (31.52/0.8882)



CANDI (31.55/0.8896)



LACANDI (31.57/0.8898)

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] 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.