

# Generalized Deep Image to Image Regression

Supplementary Material for CVPR17 submission # 2384

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	<b>DnCNN</b>	<b>RBDN</b>				
	[1]	$B_0$ ONLY	1-BR	2-BR	3-BR	4-BR
# of params	739584	343424	491264	639104	786944	934784
Memory(GB)	19.75	5.12	6.20	6.58	6.78	6.93

Table 1: Training with batch size: 128, input size: 128x128

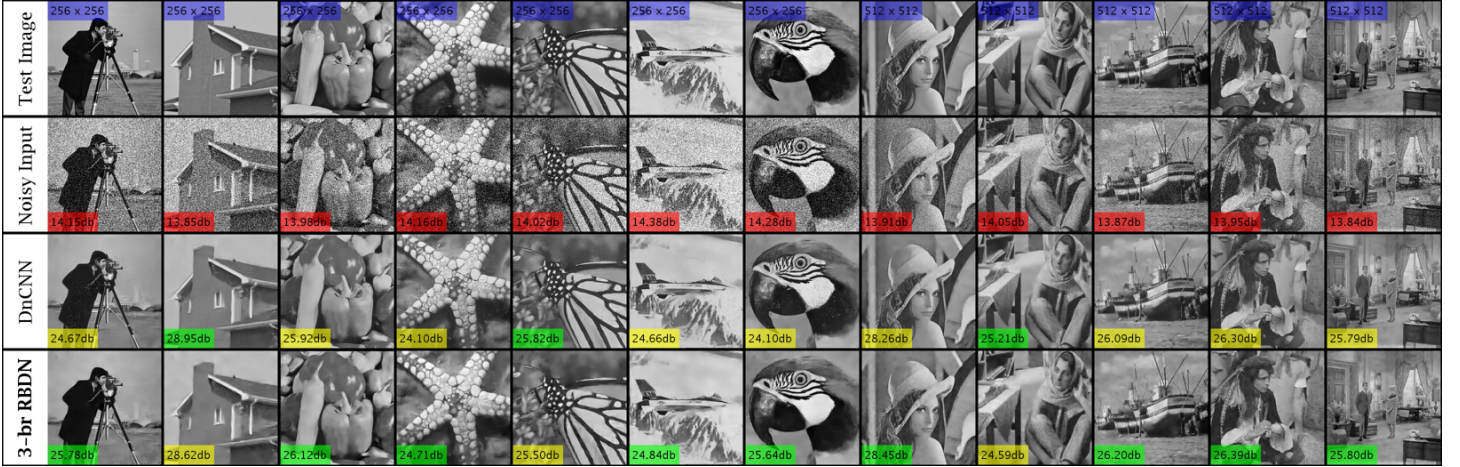


Figure 1: Denoising at  $\sigma = 55$  for 12 commonly used test images, outside our training bounds ( $\sigma \in [8, 50]$ ) for the 3-branch RBDN and DnCNN [1]. Red, Yellow, Green boxes show the PSNR.

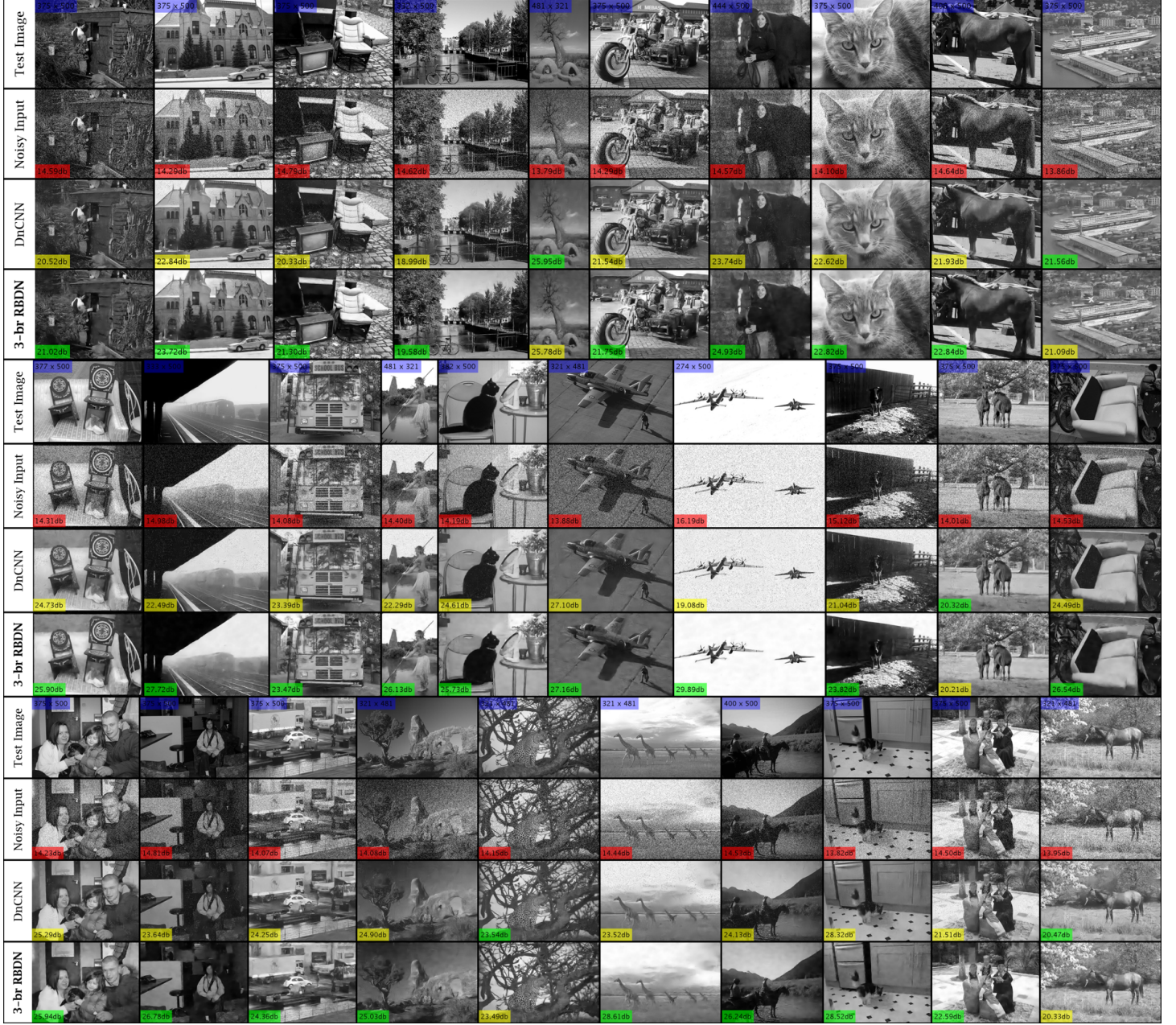


Figure 2: Denoising at  $\sigma = 55$  for test images from BSD300 [2], outside our training bounds ( $\sigma \in [8, 50]$ ) for the 3-branch RBDN and DnCNN [1]. Red, Yellow, Green boxes show the PSNR.





Figure 3: Relighting results on images from the **Janus CS0** [3] dataset. The goal is to render faces from various unknown lighting conditions to a fixed lighting condition. **Odd rows:** Inputs, **Even Rows:** 3-branch RBDN output. Note that the model is trained exclusively on *frontal* face images with *constrained* illumination variations from the **CMU-MultiPie** [4] dataset, but still generalizes reasonably well to *unconstrained* face images under a variety of *poses*, *illuminations*, *expressions*, *occlusions*, *affordances* (hats, glasses, etc.)





Figure 4: Colorizing legacy black-and-white photos: comparing 4-branch RBDN-Lab with the Colorful Colorization model of R.Zhang et al [5]





Figure 5: Colorizing legacy black-and-white photos: comparing 4-branch RBDN-Lab with the Colorful Colorization model of R.Zhang et al [5]



## References

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