

香港中文大學

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Task and Approach

- and n is zero mean additive noise.
- effectively and efficiently remove noise.
- parameters.



further towards the final solution.

DDUNet: Dense Dense U-Net with Applications in Image Denoising Fan Jia, Wing Hong Wong, Tieyong Zeng Department of Mathematics, The Chinese University of Hong Kong

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Conv Concat.	Conv + ReLU Dense U-Net Bl



Dataset	No. of	Kodak24			CBSD68			Urban100		
σ	Param.	30	50	70	30	50	70	30	50	70
CBM3D	-	30.89	28.63	27.27	29.73	27.38	26.00	30.36	27.94	26.31
TNRD	-	28.83	27.17	24.94	27.64	25.96	23.83	27.40	25.52	22.63
DnCNN	556K	31.39	29.16	27.64	30.40	28.01	26.56	30.28	28.16	26.17
IRCNN	186K	31.24	28.93	20.65	30.22	27.86	20.61	30.28	27.69	20.69
RED30	4.13M	29.71	27.62	26.36	28.46	26.35	25.09	29.02	26.40	24.74
MemNet	677K	29.67	27.65	26.40	28.39	26.33	25.08	28.93	26.53	24.93
FFDNet	485K	31.39	29.10	27.68	30.31	27.96	26.53	30.53	28.05	26.39
DIDN	165M	31.97	29.72	28.26	30.71	28.35	26.89	31.70	29.39	27.77
DHDN	168M	31.95	29.67	-	30.41	28.02	-	31.58	29.16	-
DDUNet (ours)	10.36M	32.01	29.80	28.41	30.76	28.45	27.04	31.72	29.50	27.94

competing methods for color image denoising



(a) Ground-truth

Color image denoising results of *img_076* (Urban100) with noise level of 50 in PSNR (dB).

We show that a cascade of compact networks with welldesigned cross-module feature fusion can bring significant improvement in image quality. The proposed novel connection can transfer multi-scale feature information between small networks and make the architecture effective and efficient.

Here is a video link for our method. https://youtu.be/0NF2HXgPQY0

Record of the second se

Experiments

Number of parameters and average PSNR(dB) results of the



Conclusion