

Image Super-Resolution via
Deterministic-Stochastic Synthesis and Local
Statistical Rectification
Supplementary Material

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The University of Hong Kong

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*Both authors contributed equally to this paper.

DTSN (Ours)



SRGAN



RDN



EDSR



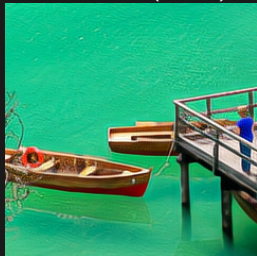
LapSRN



Bicubic



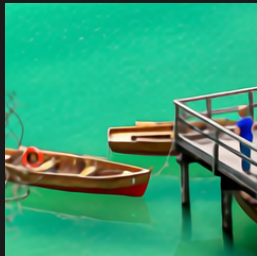
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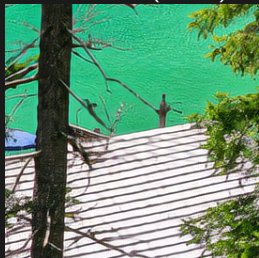
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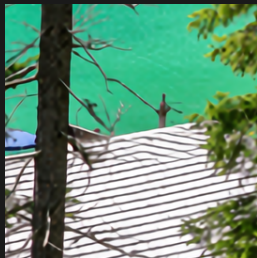
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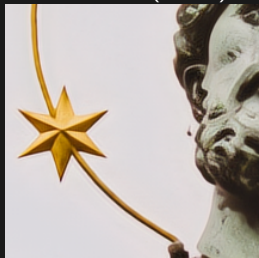
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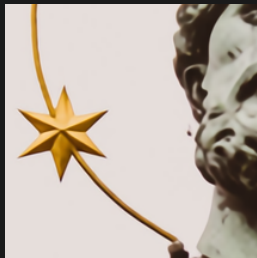
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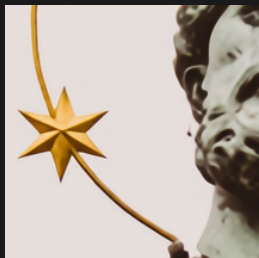
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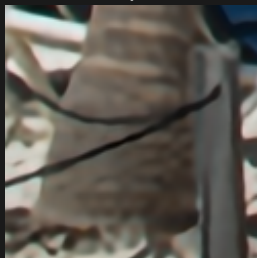
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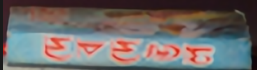
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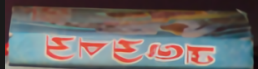
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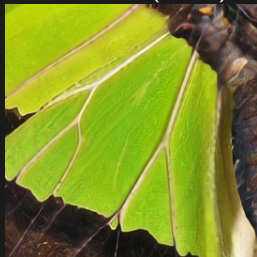
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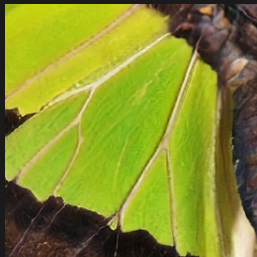
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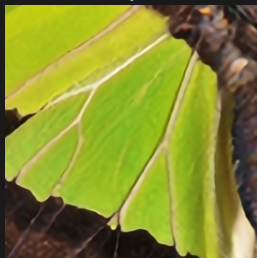
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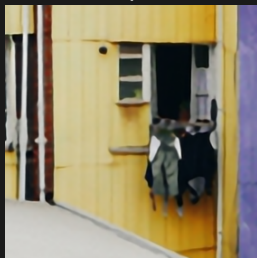
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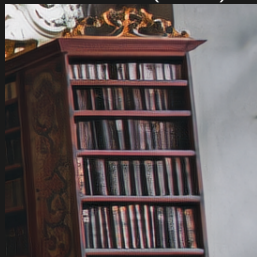
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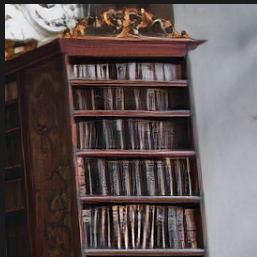
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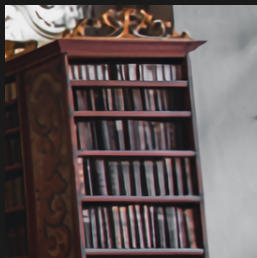
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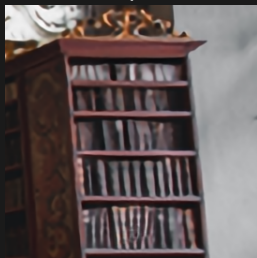
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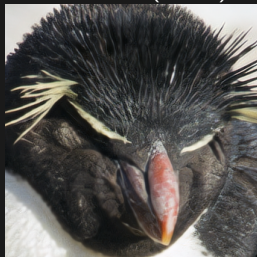
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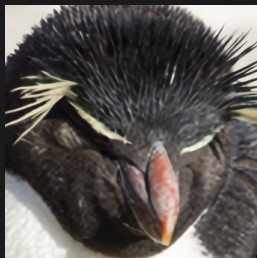
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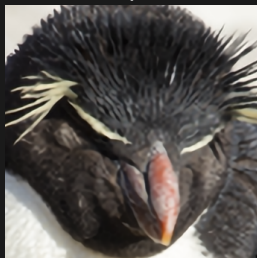
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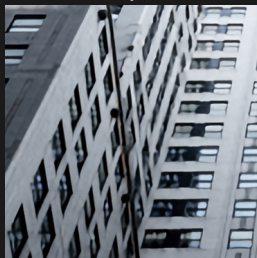
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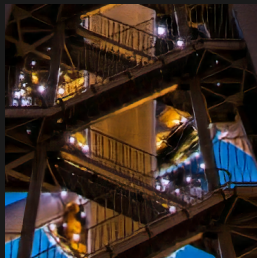
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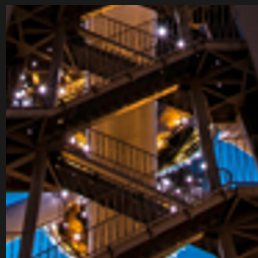
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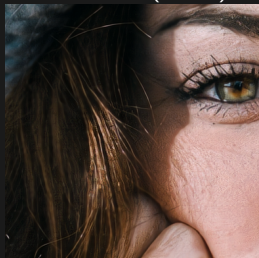
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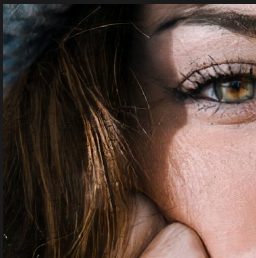
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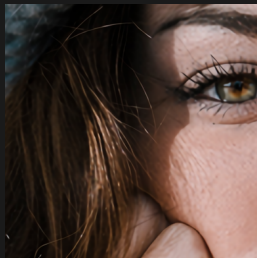
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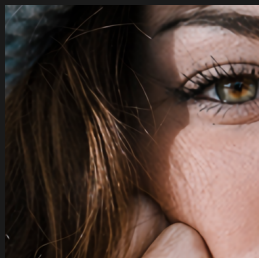
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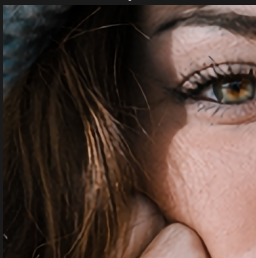
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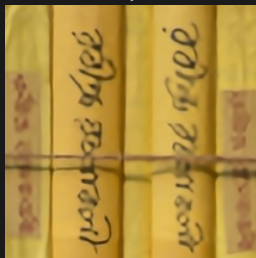
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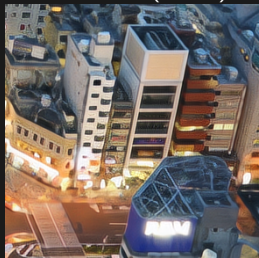
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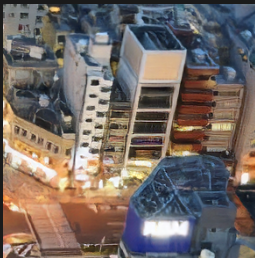
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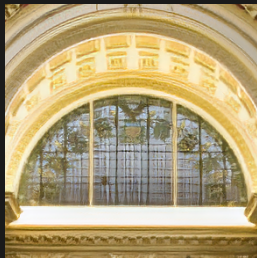
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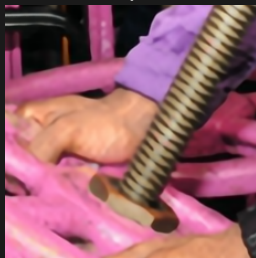
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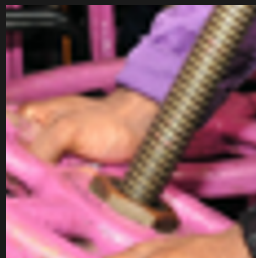
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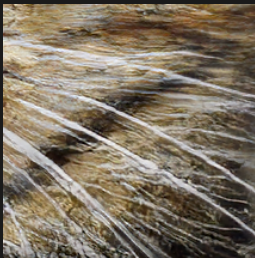
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Table 1: Stochastic Component Hallucination Generator Network

Layer name.	description
Input	Low-Res RGB Image
Conv	64 filters, 9×9 , PReLU
ResBlk	$\left[\begin{array}{l} 64 \text{ filters, } 3 \times 3, \text{ BN, PReLU} \\ 64 \text{ filters, } 3 \times 3, \text{ BN, EltSum} \end{array} \right] \times 16$
Conv	64 filters, 3×3 , BN, EltSum
Pixelshffle	$256 \rightarrow 64$ filters, 3×3 , scale $\times 2$, PReLU
Pixelshffle	$256 \rightarrow 64$ filters, 3×3 , scale $\times 2$, PReLU
Conv	3 filters, 9×9
Output	High-Res RGB Image

Table 2: Stochastic Component Hallucination Discriminator Network

Layer name.	description
Input	High-Res RGB Image
Conv	64 filters, 3 x 3, LReLU ($\alpha = 0.1$)
Conv	64 filters, 3 x 3, stride 2, BN, LReLU ($\alpha = 0.1$)
Conv	128 filters, 3 x 3, BN, LReLU ($\alpha = 0.1$)
Conv	128 filters, 3 x 3, stride 2, BN, LReLU ($\alpha = 0.1$)
Conv	256 filters, 3 x 3, BN, LReLU ($\alpha = 0.1$)
Conv	256 filters, 3 x 3, stride 2, BN, LReLU ($\alpha = 0.1$)
Conv	512 filters, 3 x 3, BN, LReLU ($\alpha = 0.1$)
Conv	512 filters, 3 x 3, stride 2, BN, LReLU ($\alpha = 0.1$)
Dense	Fully connected \rightarrow 1024, LReLU ($\alpha = 0.1$)
Dense	1024 \rightarrow 1
Output	Sigmoid

Table 3: Network parameters of the deterministic component regression.

Layer name.	description
Input	Low-Res RGB Image
Conv	64 filters, 3×3
Conv	64 filters, 3×3
ResDB	$\left[\begin{array}{l} 64 \text{ filters, } 3 \times 3, \text{ ReLU} \times 8 \\ \text{Concat, 64 filters, } 1 \times 1, \text{ EltSum} \end{array} \right] \times 16$
Concat	$16 \times$ conv input
Conv	64 filters, 1×1
Conv	64 filters, 3×3 , EltSum
Pixelshufffle	$256 \rightarrow 64$ filters, 3×3 , scale $\times 2$
Pixelshufffle	$256 \rightarrow 64$ filters, 3×3 , scale $\times 2$
Conv	3 filters, 3×3
Output	High-Res RGB Image