Supplementary Results

Deep Hybrid Real and Synthetic Training for Intrinsic Decomposition

EGSR 2018
Results

• We include the full images for all comparisons in the paper.

• We place our results between other methods so that comparisons could be made by flipping back and forth between them.
Figure 1
Shi et al. [2017], WHDR = 75.70%

Reflectance

Shading
Ours, WHDR = 6.61%

Reflectance

Shading
Narihira et al. [2015], WHDR = 36.03%
Ours, WHDR = 6.61%

Reflectance

Shading
Zhou et al. [2015], WHDR = 11.48%

Reflectance

Shading
Ours, WHDR = 6.61%

Reflectance

Shading
Nestmeyer et al. [2017], WHDR = 7.35%
Ours, WHDR = 6.61%
Figure 3
Input
Only synthetic

Reflectance

Shading
Our full method

**Reflectance**

**Shading**
Only real

Reflectance

Shading
Figure 6
Input
Without bilateral

Reflectance

Shading
With bilateral Reflectance

Shading
Figure 7
Zhou et al. [2015]

Reflectance

Shading
Ours

Reflectance

Shading
Figure 9
SOFA
Bi et al. [2015], WHDR = 18.11%

Reflectance

Shading
SOFA
Ours, WHDR = 9.62%

Reflectance

Shading
SOFA
Zhou et al. [2015], WHDR = 11.22%
SOFA
Ours, WHDR = 9.62%

Reflectance

Shading
SOFA
Narihira et al. [2015], WHDR = 47.98%

Reflectance

Shading
SOFA
Ours, WHDR = 9.62%

Reflectance

Shading
SOFA
Shi et al. [2017], WHDR = 55.88%

Reflectance

Shading
SOFA
Ours, WHDR = 9.62%

Reflectance

Shading
SOFA
Nestmeyer et al. [2017], WHDR = 11.01%
SOFA
Ours, WHDR = 9.62%
KITCHEN
Bi et al. [2015], WHDR = 6.11%

Reflectance

Shading
KITCHEN
Ours, WHDR = 4.41%

Reflectance

Shading
KITCHEN
Zhou et al. [2015], WHDR = 11.27%

Reflectance

Shading
KITCHEN
Ours, WHDR = 4.41%

Reflectance

Shading
KITCHEN
Narihira et al. [2015], WHDR = 46.50%
KITCHEN
Ours, WHDR = 4.41%

Reflectance  Shading
KITCHEN
Shi et al. [2017], WHDR = 53.50%
KITCHEN
Ours, WHDR = 4.41%
KITCHEN
Nestmeyer et al. [2017], WHDR = 7.27%

Reflectance

Shading
KITCHEN
Ours, WHDR = 4.41%

Reflectance

Shading
CUPBOARD
Bi et al. [2015], WHDR = 24.49%

Reflectance

Shading
CUPBOARD
Ours, WHDR = 10.45%

Reflectance

Shading
CUPBOARD
Zhou et al. [2015], WHDR = 23.59%

Reflectance

Shading
CUPBOARD
Ours, WHDR = 10.45%
CUPBOARD
Narihira et al. [2015], WHDR = 51.23%

Reflectance

Shading
CUPBOARD
Ours, WHDR = 10.45%

Reflectance

Shading
CUPBOARD
Shi et al. [2017], WHDR = 31.79%

Reflectance

Shading
CUPBOARD
Ours, WHDR = 10.45%

Reflectance

Shading
CUPBOARD
Nestmeyer et al. [2017], WHDR = 17.37%
CUPBOARD
Ours, WHDR = 10.45%

Reflectance

Shading
LIVING ROOM
Bi et al. [2015], WHDR = 17.33%

Reflectance

Shading
LIVING ROOM
Ours, WHDR = 24.70%

Reflectance

Shading
LIVING ROOM
Zhou et al. [2015], WHDR = 37.26%

Reflectance

Shading
LIVING ROOM
Ours, WHDR = 24.70%

Reflectance

Shading
LIVING ROOM
Narihira et al. [2015], WHDR = 47.57%

Reflectance

Shading
LIVING ROOM
Ours, WHDR = 24.70%

Reflectance

Shading
LIVING ROOM
Shi et al. [2017], WHDR = 49.70%

Reflectance

Shading
LIVING ROOM
Ours, WHDR = 24.70%

Reflectance

Shading
LIVING ROOM
Nestmeyer et al. [2017], WHDR = 20.05%

Reflectance

Shading
LIVING ROOM
Ours, WHDR = 24.70%

Reflectance

Shading
OFFICE Input
OFFICE
Bi et al. [2015], WHDR = 15.96%

Reflectance

Shading
OFFICE
Ours, WHDR = 17.48%

Reflectance  Shading
OFFICE
Zhou et al. [2015], WHDR = 17.39%

Reflectance

Shading
OFFICE
Ours, WHDR = 17.48%

Reflectance

Shading
OFFICE
Narihira et al. [2015], WHDR = 38.69%

Reflectance

Shading
OFFICE
Ours, WHDR = 17.48%

Reflectance

Shading
OFFICE
Shi et al. [2017], WHDR = 46.60%

Reflectance

Shading
OFFICE
Ours, WHDR = 17.48%

Reflectance

Shading
OFFICE
Nestmeyer et al. [2017], WHDR = 14.24%

Reflectance

Shading
OFFICE
Ours, WHDR = 17.48%

Reflectance

Shading
Figure 10
BEDROOM
Input
BEDROOM
Zoran et al. [2015], WHDR = 16.10%
BEDROOM
Ours, WHDR = 6.94%
LOUNGE
Zoran et al. [2015], WHDR = 28.99%

Reflectance

Shading
LOUNGE
Ours, WHDR = 24.36%

Reflectance

Shading
Figure 11
Input

Input image 1

Input image 2
Ours

Reconstructed image 1
MPRE($\times 10^{-2}$): 0.41

Reconstructed image 2
MPRE($\times 10^{-2}$): 0.85
Bi et al. [2015]

Reconstructed image 1
MPRE($\times 10^{-2}$): 2.89

Reconstructed image 2
MPRE($\times 10^{-2}$): 5.45
Ours

Reconstructed image 1
MPRE($\times 10^{-2}$): 0.41

Reconstructed image 2
MPRE($\times 10^{-2}$): 0.85
Zhou et al. [2015]

Reconstructed image 1
MPRE($\times 10^{-2}$): 0.73

Reconstructed image 2
MPRE($\times 10^{-2}$): 1.62
Ours

Reconstructed image 1
MPRE($\times 10^{-2}$): 0.41

Reconstructed image 2
MPRE($\times 10^{-2}$): 0.85
Zoran et al. [2015]

Reconstructed image 1
MPRE$(\times 10^{-2})$: 1.19

Reconstructed image 2
MPRE$(\times 10^{-2})$: 3.04
Ours

Reconstructed image 1
MPRE($\times 10^{-2}$): 0.41

Reconstructed image 2
MPRE($\times 10^{-2}$): 0.85
Reconstructed image 1
MPRE($\times 10^{-2}$): 0.50

Reconstructed image 2
MPRE($\times 10^{-2}$): 1.13
Reconstructed image 1
MPRE($\times 10^{-2}$): 0.41

Reconstructed image 2
MPRE($\times 10^{-2}$): 0.85
Figure 12
Input
Bi et al. [2015]
Ours
Zhou et al. [2015]
Ours
Narihira et al. [2015]
Ours
Shi et al. [2017]
Ours
Nestmeyer et al. [2017]
Ours
Figure 13
Zoran et al. [2015]

Reflectance
si-MSE($\times 10^{-2}$): 1.39

Shading
si-MSE($\times 10^{-2}$): 3.08
Ours

Reflectance
si-MSE($\times 10^{-2}$): 0.95

Shading
si-MSE($\times 10^{-2}$): 2.17
Narihira et al. [2015]

Reflectance
si-MSE($\times 10^{-2}$): 1.05

Shading
si-MSE($\times 10^{-2}$): 3.10
Ours

Reflectance
si-MSE($\times 10^{-2}$): 0.95

Shading
si-MSE($\times 10^{-2}$): 2.17
Nestmeyer et al. [2017]

Reflectance
si-MSE($\times 10^{-2}$): 1.04

Shading
si-MSE($\times 10^{-2}$): 3.22
Ours

Reflectance
si-MSE($\times 10^{-2}$): 0.95

Shading
si-MSE($\times 10^{-2}$): 2.17
END