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

Input

Shi et al. [2017], WHDR = 75.70%

Reflectance

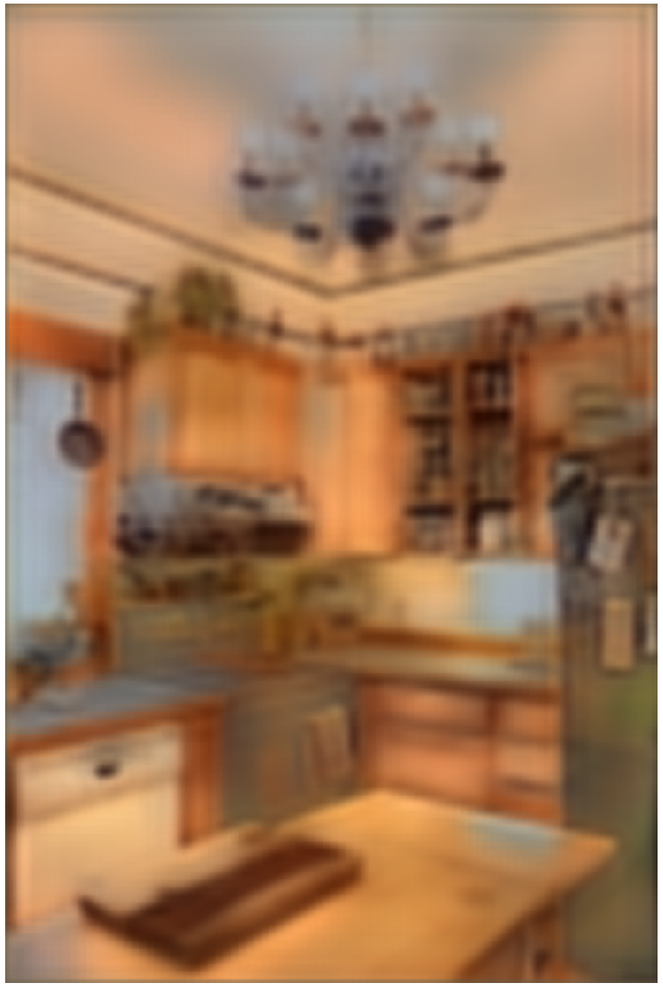
Shading

Ours, WHDR = 6.61%

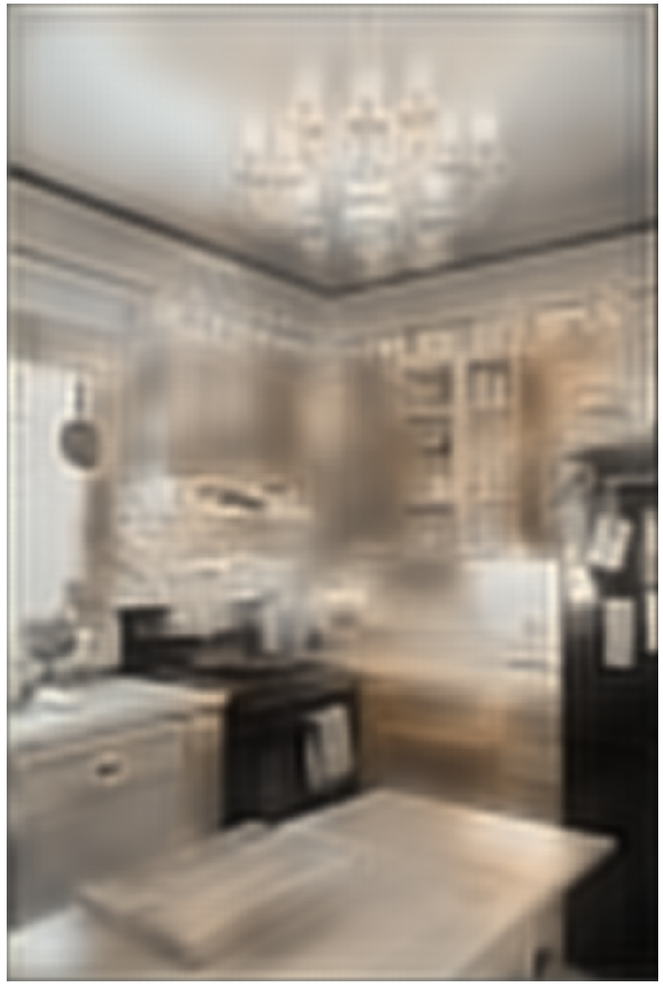
Reflectance

Shading

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



Reflectance



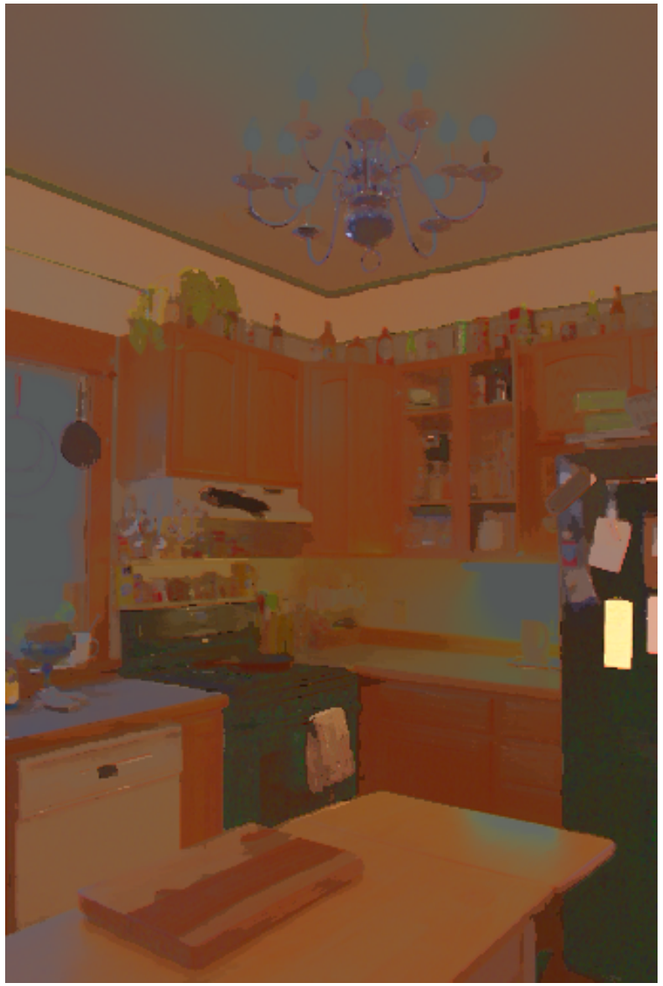
Shading

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%

Reflectance

Shading

Ours, WHDR = 6.61%

Reflectance

Shading

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

Input

Zhou et al. [2015]

Reflectance

Shading

Ours

Reflectance

Shading

Figure 9

SOFA
Input

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%

Reflectance

Shading

SOFA
Ours, WHDR = 9.62%

Reflectance

Shading

SOFA

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

Reflectance

Shading

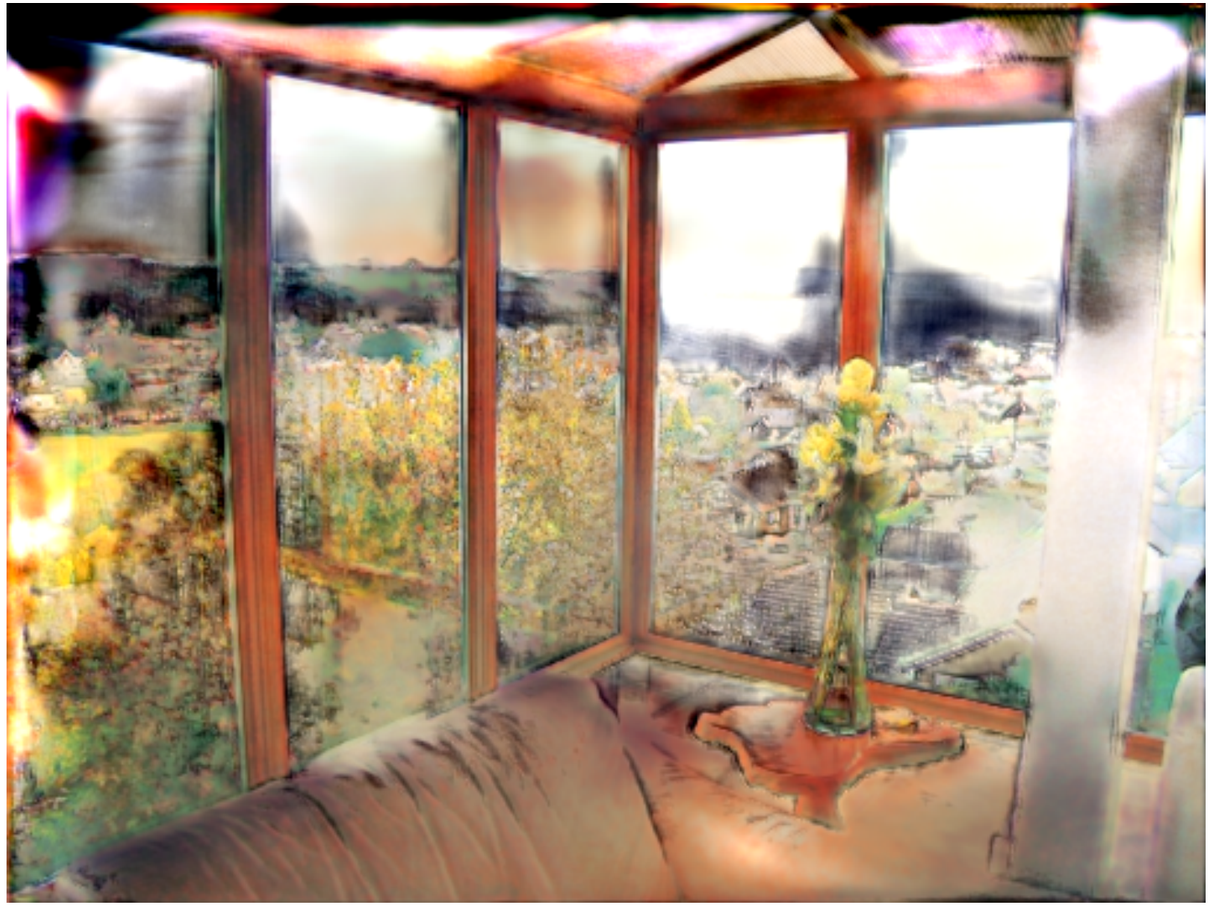
SOFA
Ours, WHDR = 9.62%

Reflectance

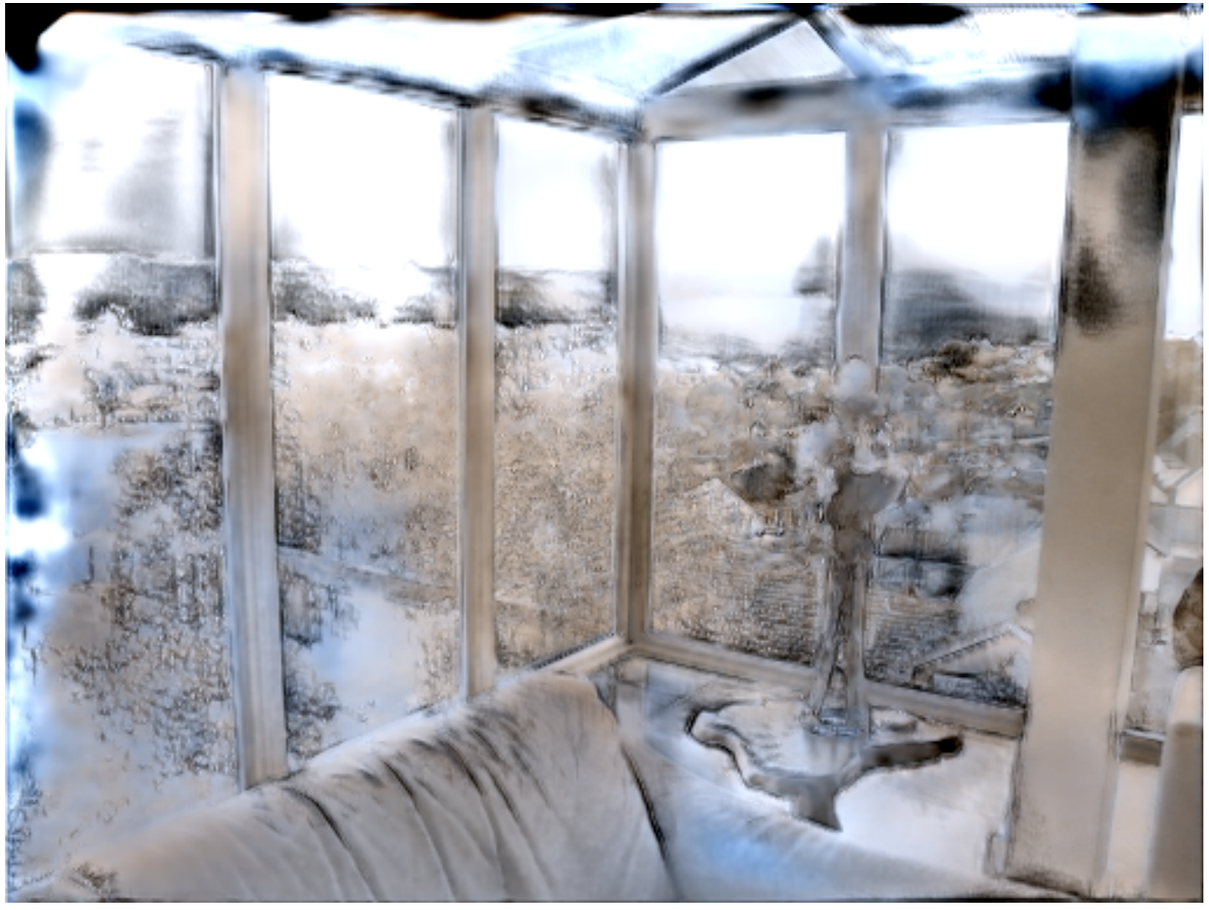
Shading

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%

Reflectance

Shading

SOFA
Ours, WHDR = 9.62%

Reflectance

Shading

KITCHEN
Input

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%

Reflectance

Shading

KITCHEN
Ours, WHDR = 4.41%

Reflectance

Shading

KITCHEN

Shi et al. [2017], WHDR = 53.50%

Reflectance

Shading

KITCHEN
Ours, WHDR = 4.41%

Reflectance

Shading

KITCHEN

Nestmeyer et al. [2017], WHDR = 7.27%

Reflectance

Shading

KITCHEN
Ours, WHDR = 4.41%

Reflectance

Shading

CUPBOARD

Input

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%

Reflectance

Shading

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%

Reflectance

Shading

CUPBOARD
Ours, WHDR = 10.45%

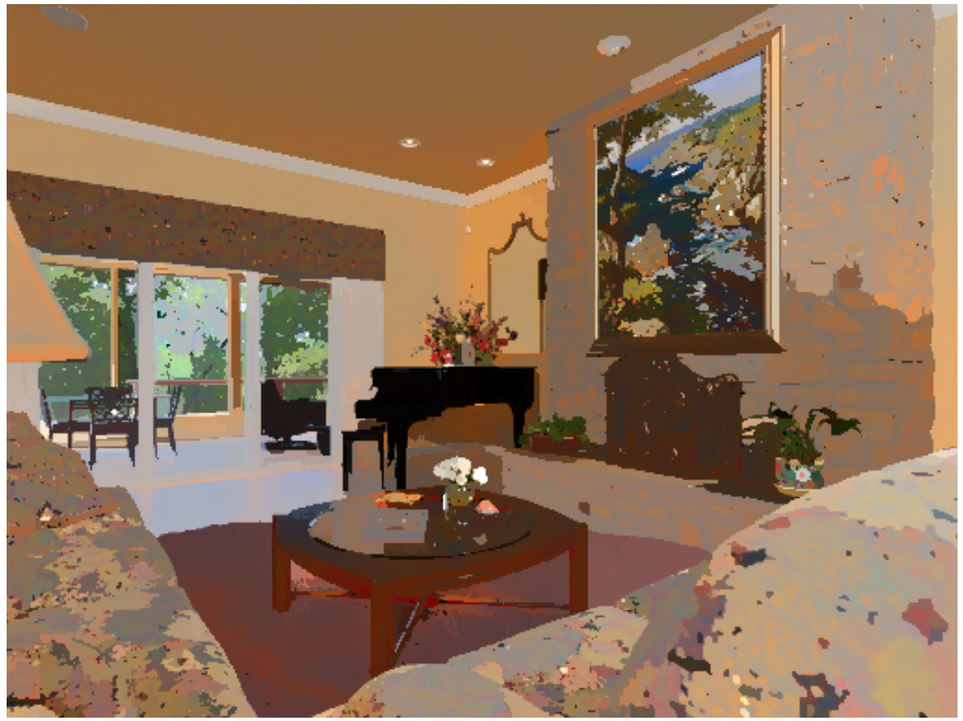
Reflectance

Shading

LIVING ROOM
Input

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%

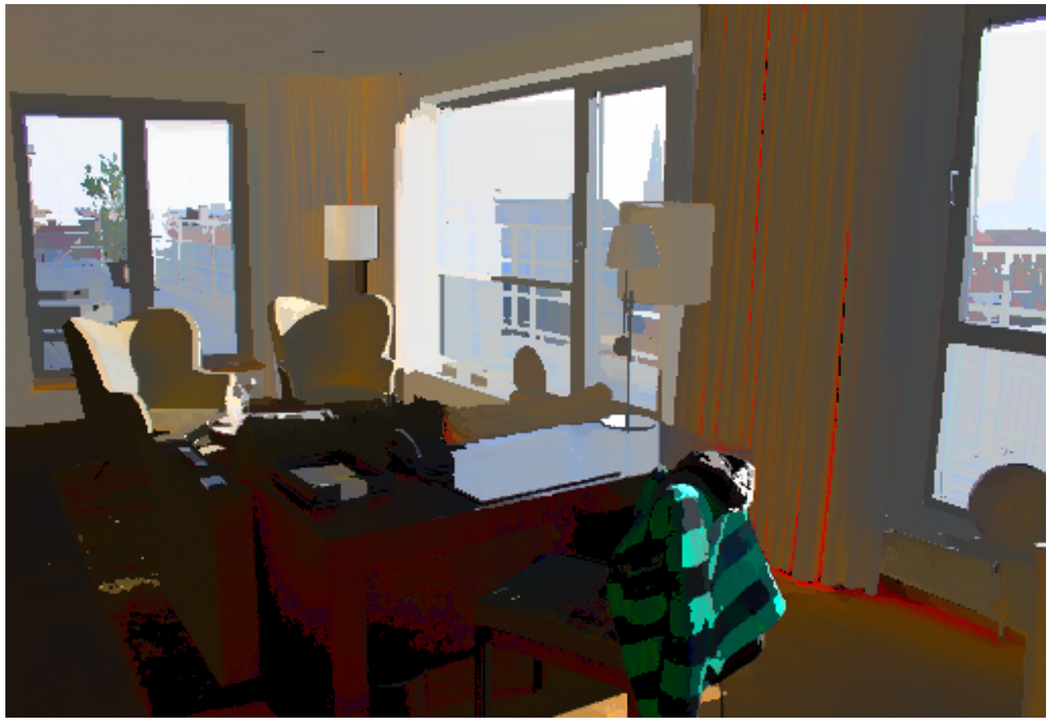
Reflectance

Shading

OFFICE
Input

OFFICE

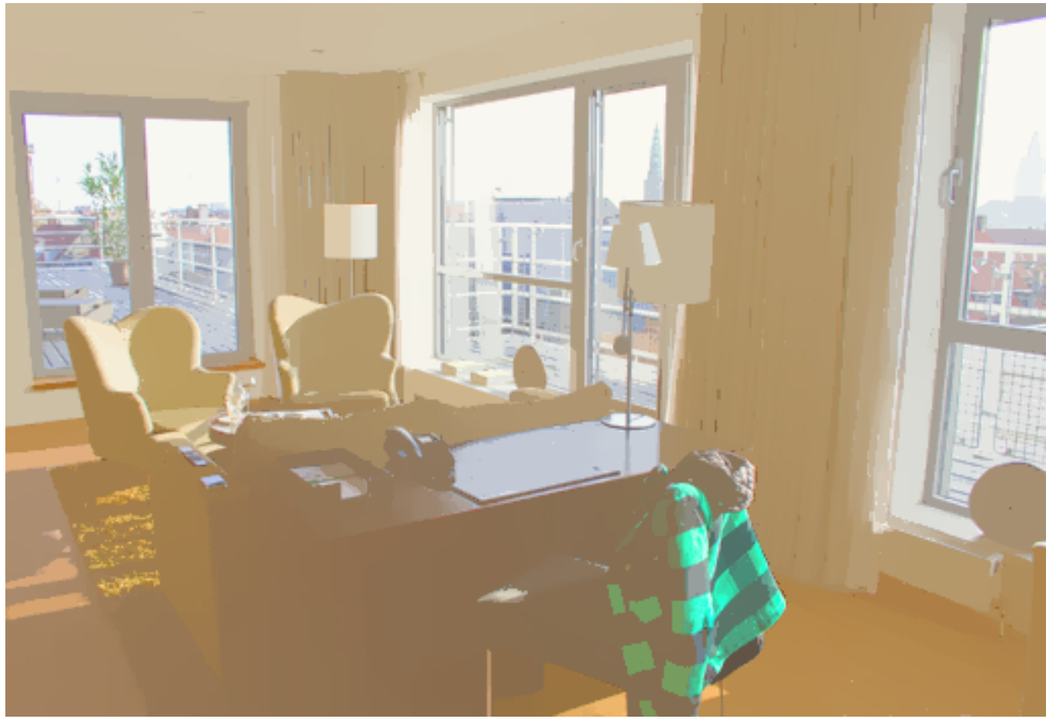
Bi et al. [2015], WHDR = 15.96%



Reflectance

Shading

OFFICE
Ours, WHDR = 17.48%

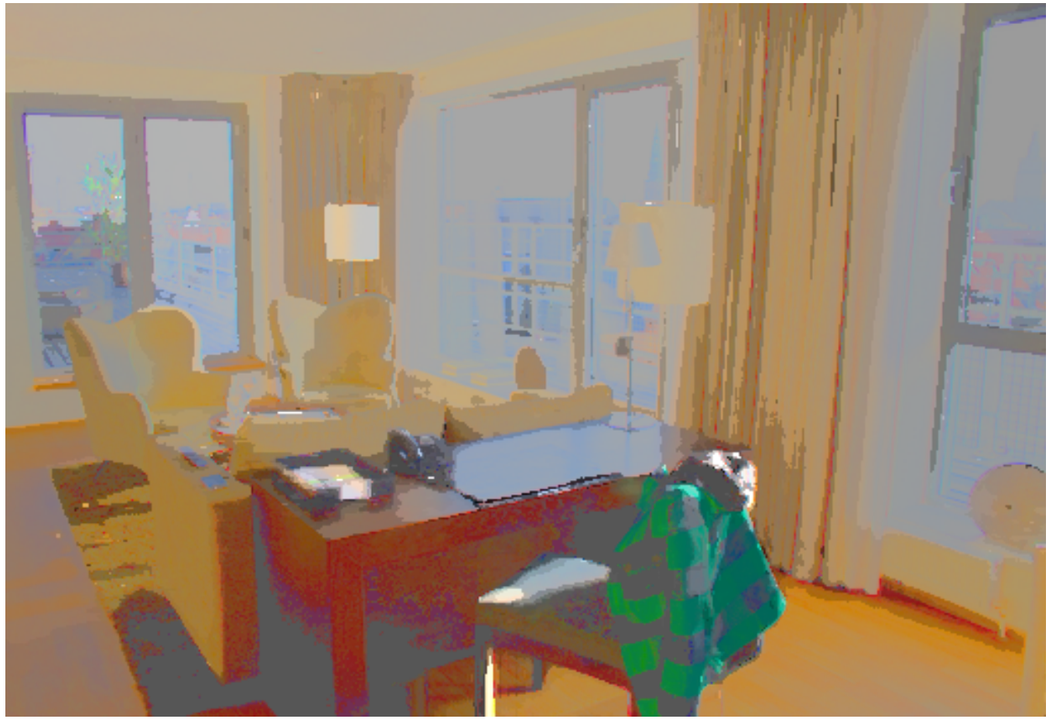


Reflectance

Shading

OFFICE

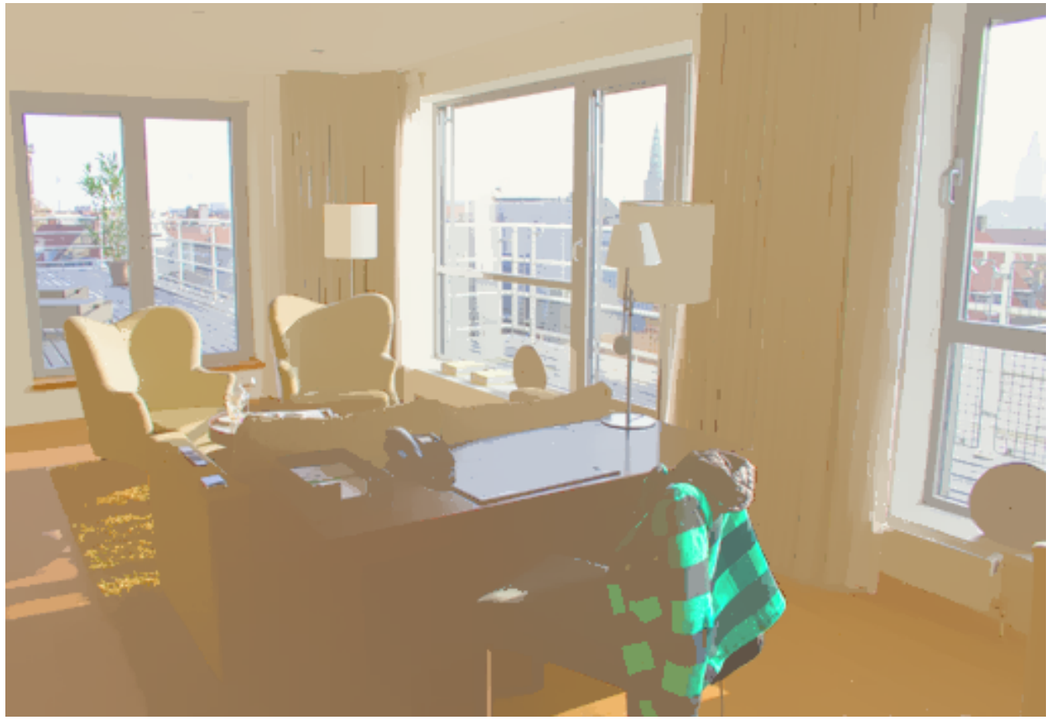
Zhou et al. [2015], WHDR = 17.39%



Reflectance

Shading

OFFICE
Ours, WHDR = 17.48%

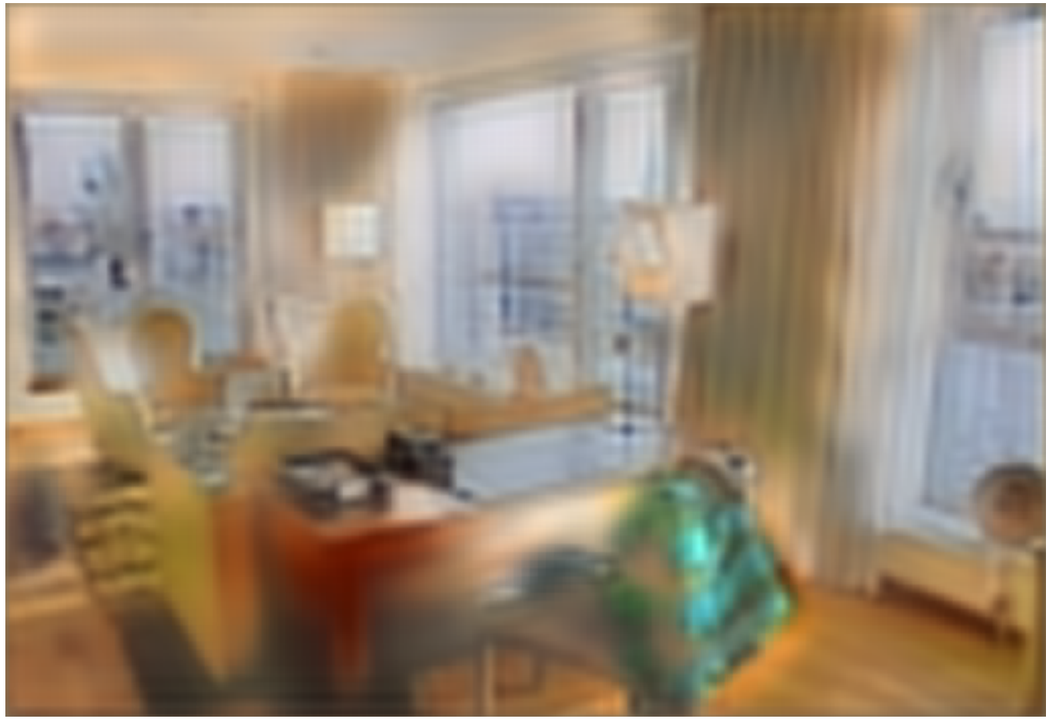


Reflectance

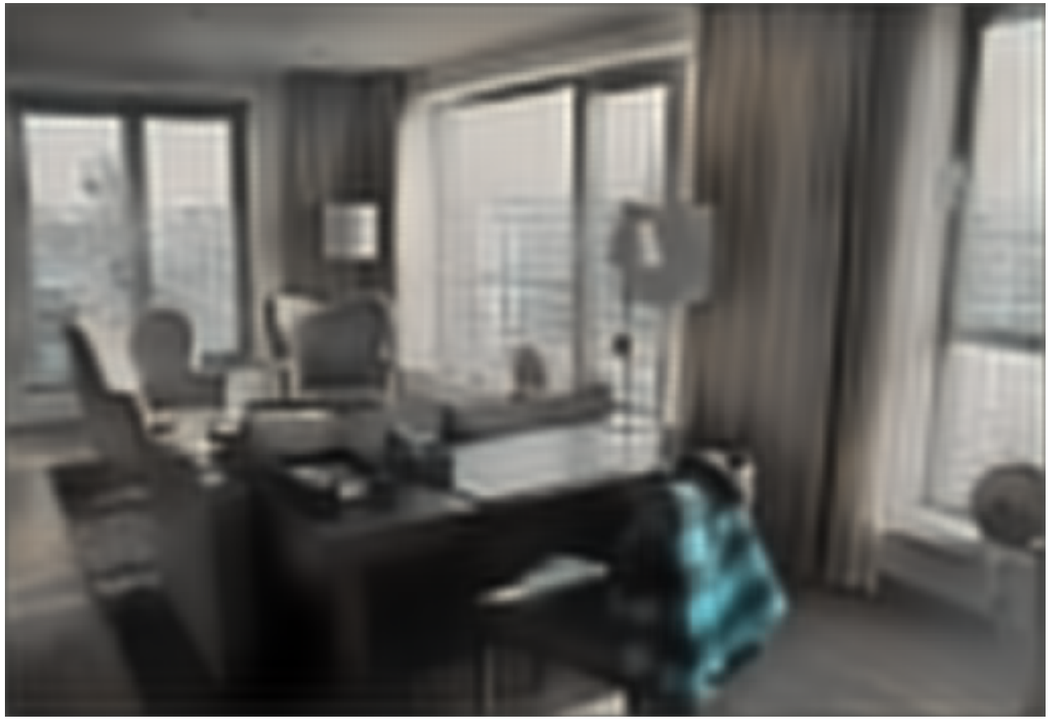
Shading

OFFICE

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

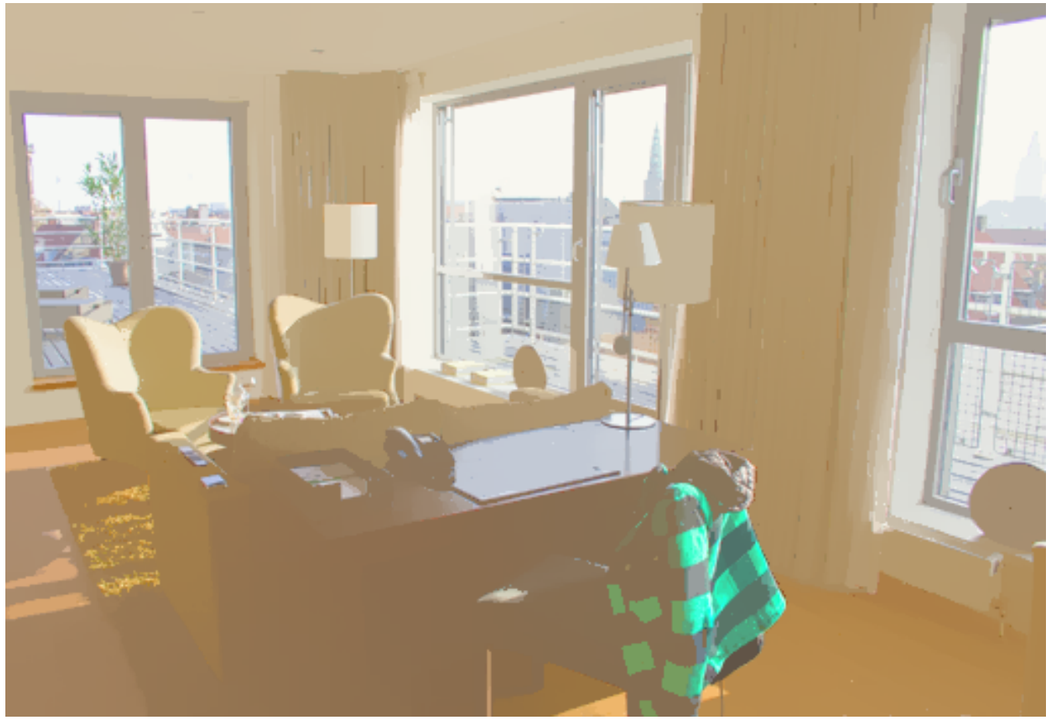


Reflectance



Shading

OFFICE
Ours, WHDR = 17.48%



Reflectance

Shading

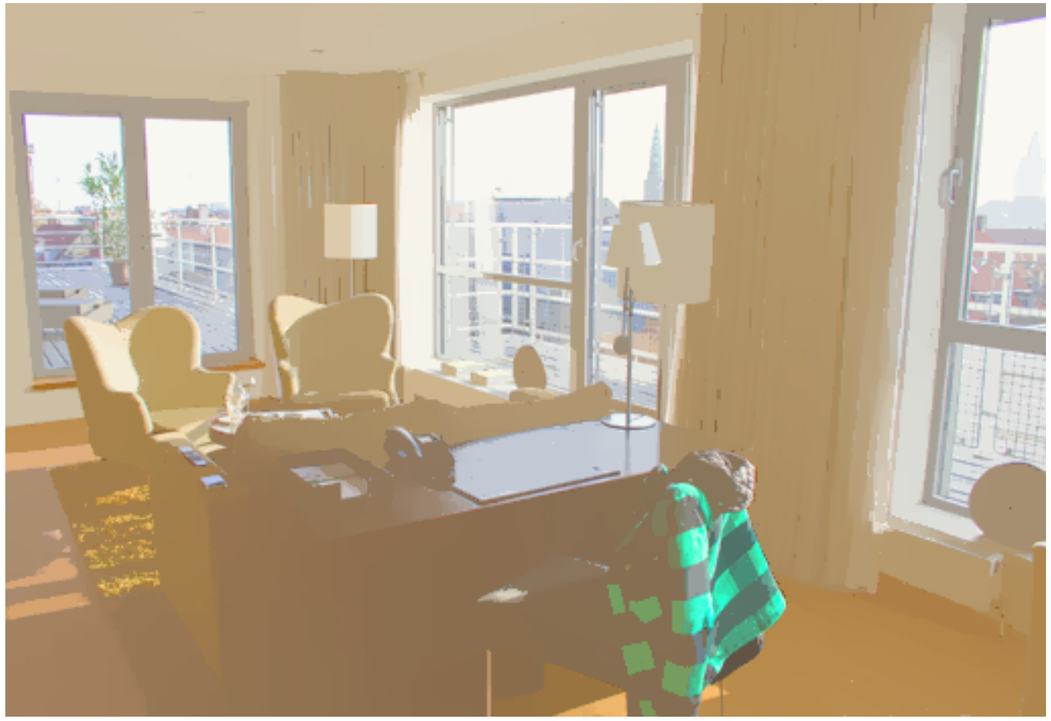
OFFICE

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

Reflectance

Shading

OFFICE
Ours, WHDR = 17.48%



Reflectance

Shading

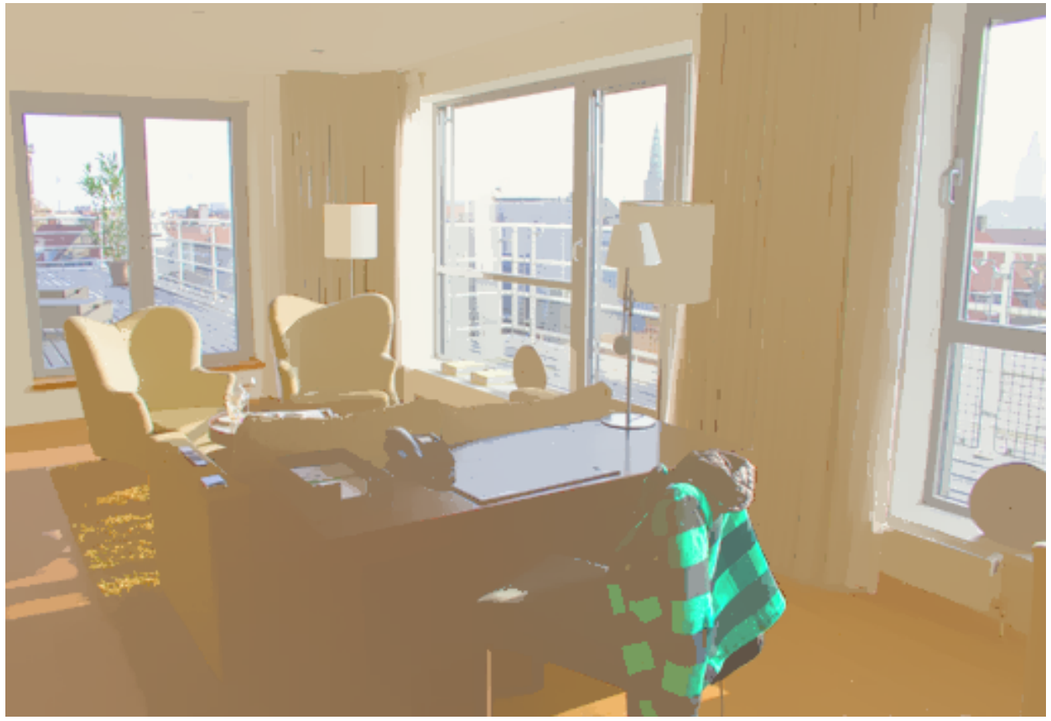
OFFICE

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%

Reflectance

Shading

BEDROOM
Ours, WHDR = 6.94%

Reflectance

Shading

LOUNGE
Input

LOUNGE

Zoran et al. [2015], WHDR = 28.99%

Reflectance

Shading

LOUNGE
Ours, WHDR = 24.36%

Reflectance

Shading

Figure 11

Input

Input image 1

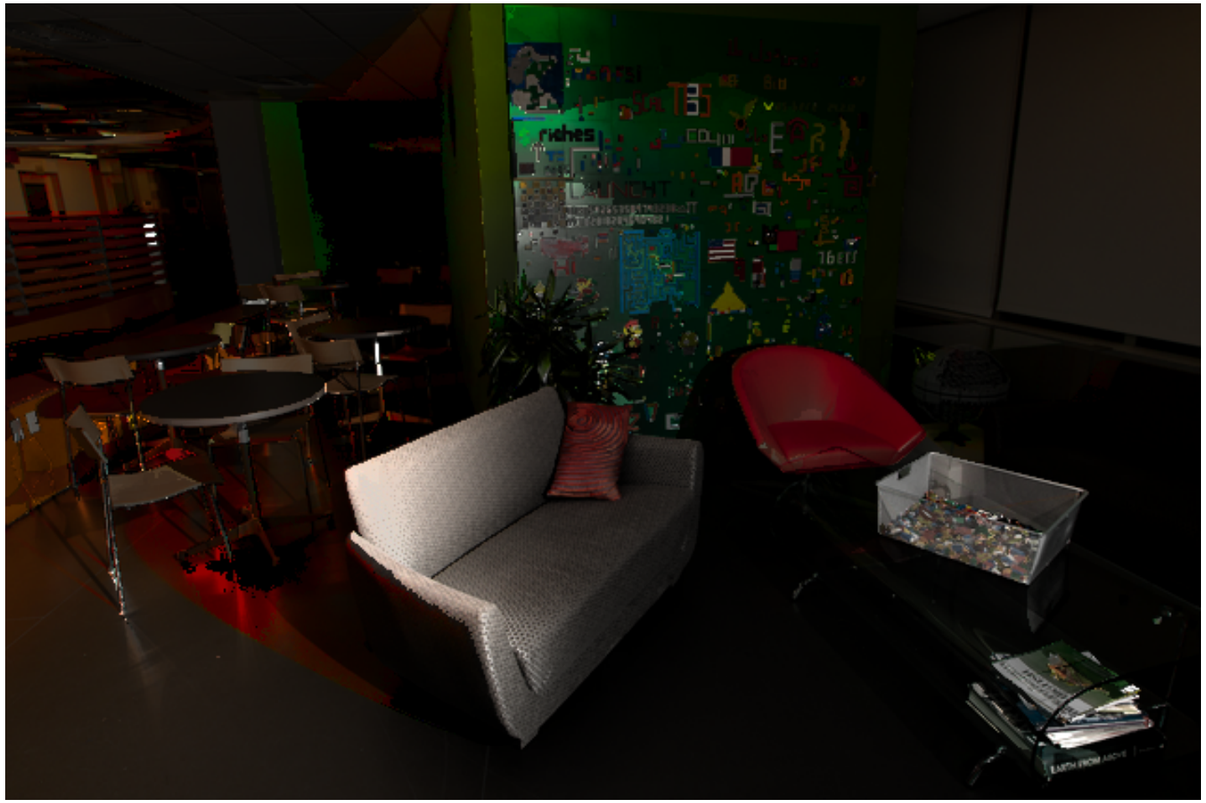
Input image 2

Ours

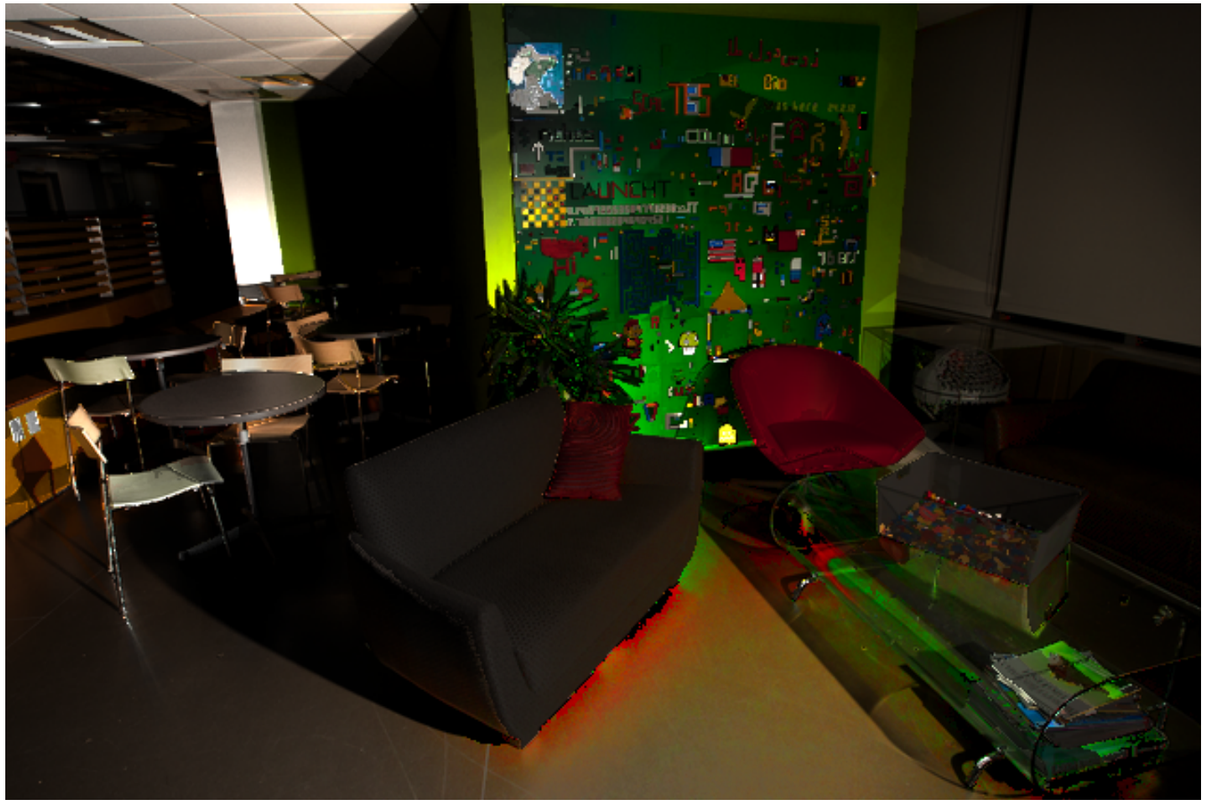
Reconstructed image 1
MPRE($\times 10^{-2}$): 0.41

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

Nestmeyer et al. [2017]

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

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

Ours

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]

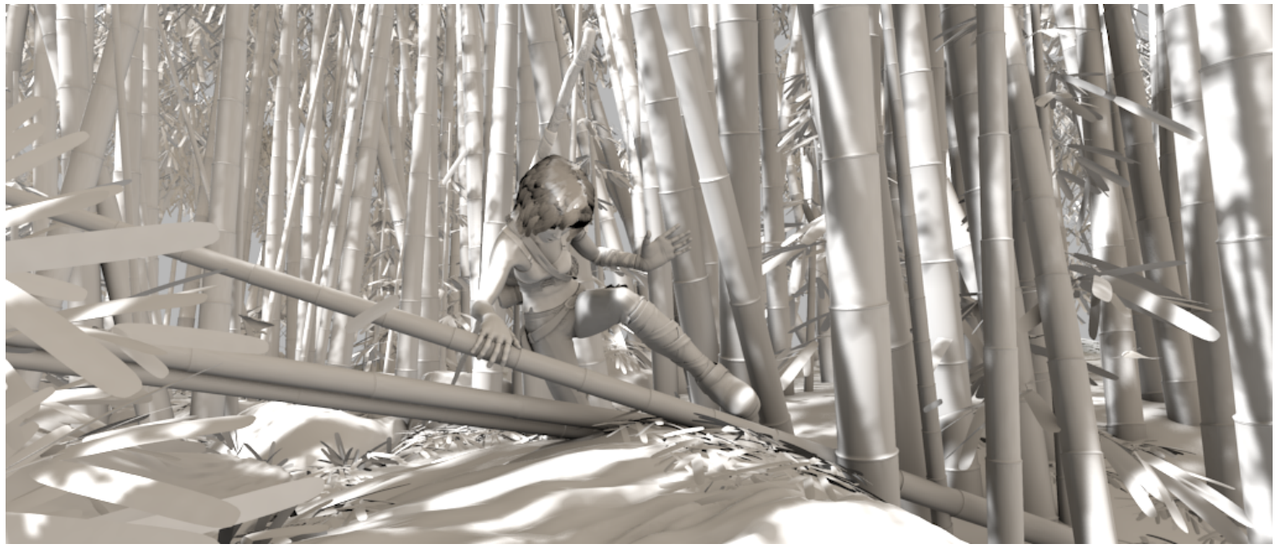
Ours

Figure 13

Input

Ground truth

Reflectance



Shading

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

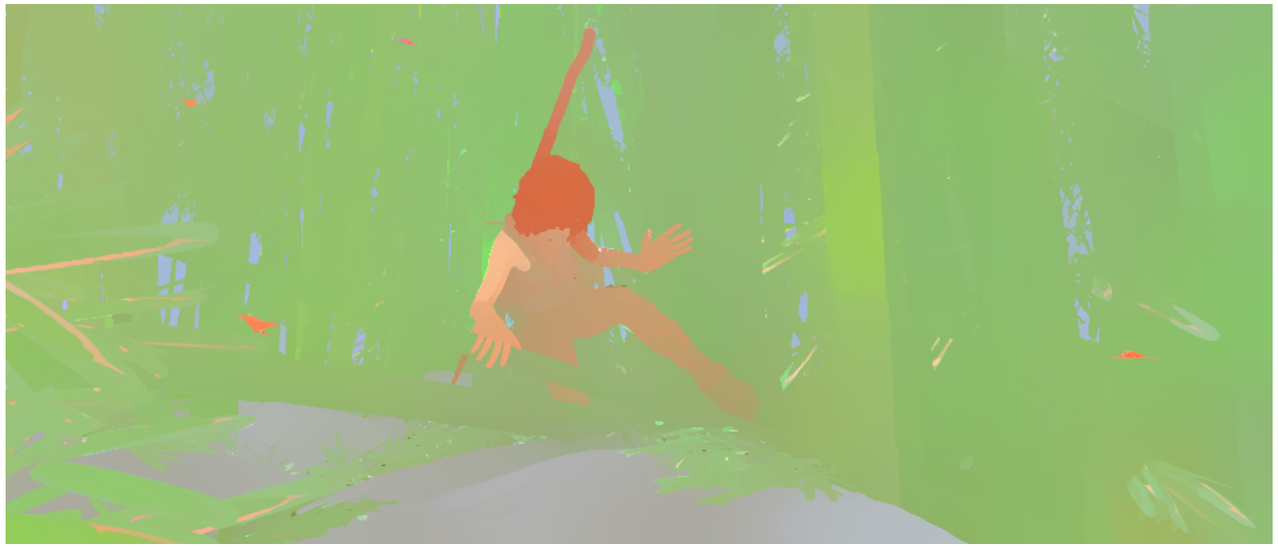
Shading
si-MSE($\times 10^{-2}$): 3.10

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