

## Supplementary Material II: Comparison

Filters	Image 1	Image 2	Image 3	Image 4	Image 5	Image 6	Image 7	Image 8	Image 9	Image 10	Image 11
ColorCut★	0.36	0.19	0.55	0.44	0.56	0.47	0.55	0.42	0.42	0.58	0.39
ColorCut□	0.44	0.28	0.42	0.47	0.41	0.42	0.38	0.33	0.29	0.45	0.36
DryBrush★	0.55	0.34	0.40	0.68	0.56	0.60	0.48	0.39	0.40	0.42	0.36
DryBrush□	0.42	0.23	0.34	0.42	0.39	0.39	0.33	0.27	0.25	0.38	0.31
Sponge★	0.41	0.37	0.59	0.61	0.48	0.52	0.41	0.23	0.39	0.44	0.49
Sponge□	0.47	0.28	0.42	0.61	0.49	0.46	0.37	0.32	0.25	0.43	0.43
Filters	Image 12	Image 13	Image 14	Image 15	Image 16	Image 17	Image 18	Image 19	Image 20	Image 21	Average
Mural★	0.43	0.51	0.63	0.55	0.67	0.56	0.60	0.38	0.55	0.64	<b>0.50</b>
Mural□	0.32	0.50	0.61	0.49	0.60	0.58	0.52	0.42	0.43	0.55	<b>0.44</b>
DryBrush★	0.28	0.51	0.67	0.65	0.64	0.71	0.47	0.64	0.63	0.79	<b>0.54</b>
DryBrush□	0.41	0.44	0.62	0.30	0.65	0.58	0.34	0.28	0.18	0.46	<b>0.38</b>
Sponge★	0.32	0.46	0.48	0.52	0.53	0.42	0.51	0.49	0.40	0.43	<b>0.45</b>
Sponge□	0.38	0.36	0.37	0.38	0.32	0.38	0.41	0.41	0.39	0.33	<b>0.39</b>

**Table 1:** SSIM comparison table between OUR results and ICA results on a part of our image dataset, note that ICA can only handle well 4 kinds of filters out of above 10 filters as we shown in Supplementary Material I (Figure 1 - Figure 9). The symbol ★ represents OUR results and symbol □ represents ICA results. As shown in the table, OUR results are numerical better than ICA results using SSIM. Please refer to the following figures respectively. ICA method is short for the method provided by [Zhang et al, TMM 2013]Style Transfer via Image Component Analysis.



Example Input  $A$



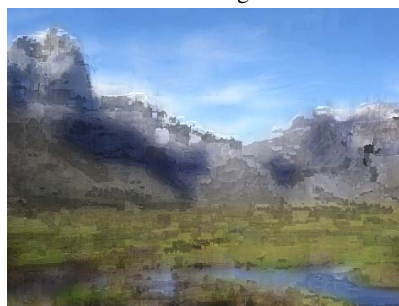
Source Image  $B$



Source Image  $B$



ColorCut  $A_1$



Transferred  $B_1$ [OUR]



Transferred  $B_1$ [ICA]



DryBrush  $A_2$



Transferred  $B_2$ [OUR]



Transferred  $B_1$ [ICA]



Sponge  $A_3$



Transferred  $B_3$ [OUR]



Transferred  $B_1$ [ICA]

**Figure 1:** *Image 1.*



Figure 2: Image 2.



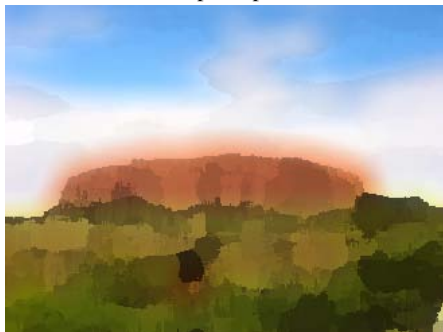
Example Input  $A$



Source Image  $B$



Source Image  $B$



ColorCut  $A_1$



Transferred  $B_1$ [OUR]



Transferred  $B_1$ [ICA]



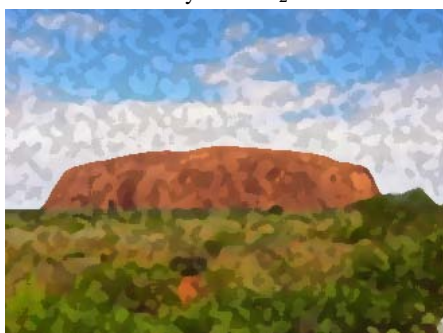
DryBrush  $A_2$



Transferred  $B_2$ [OUR]



Transferred  $B_1$ [ICA]



Sponge  $A_3$



Transferred  $B_3$ [OUR]



Transferred  $B_1$ [ICA]

Figure 3: Image 3.



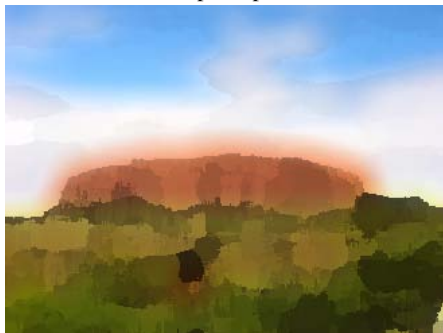
Example Input  $A$



Source Image  $B$



Source Image  $B$



ColorCut  $A_1$



Transferred  $B_1$ [OUR]



Transferred  $B_1$ [ICA]



DryBrush  $A_2$



Transferred  $B_2$ [OUR]



Transferred  $B_1$ [ICA]



Sponge  $A_3$



Transferred  $B_3$ [OUR]



Transferred  $B_1$ [ICA]

Figure 4: Image 4.



Example Input  $A$



Source Image  $B$



Source Image  $B$



ColorCut  $A_1$



Transferred  $B_1$ [OUR]



Transferred  $B_1$ [ICA]



DryBrush  $A_2$



Transferred  $B_2$ [OUR]



Transferred  $B_1$ [ICA]



Sponge  $A_3$



Transferred  $B_3$ [OUR]



Transferred  $B_1$ [ICA]

Figure 5: Image 5.



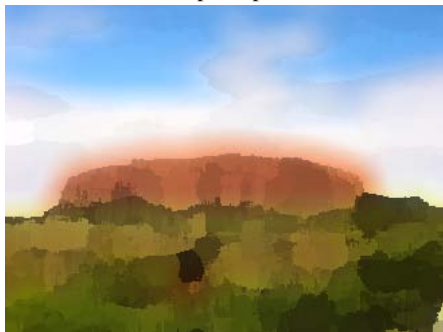
Example Input  $A$



Source Image  $B$



Source Image  $B$



ColorCut  $A_1$



Transferred  $B_1$ [OUR]



Transferred  $B_1$ [ICA]



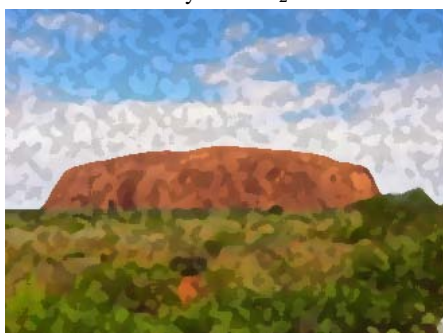
DryBrush  $A_2$



Transferred  $B_2$ [OUR]



Transferred  $B_1$ [ICA]



Sponge  $A_3$



Transferred  $B_3$ [OUR]



Transferred  $B_1$ [ICA]

**Figure 6:** Image 6.



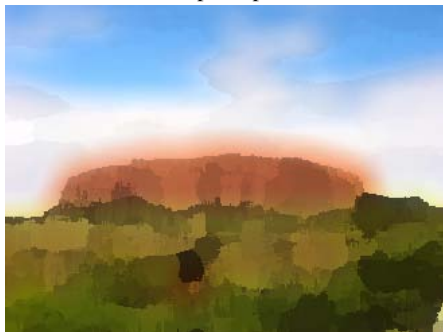
Example Input  $A$



Source Image  $B$



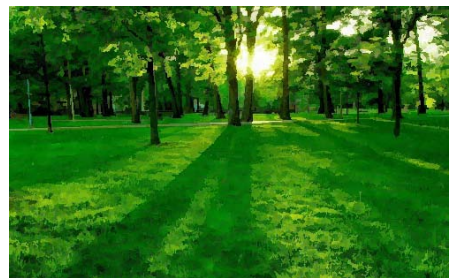
Source Image  $B$



ColorCut  $A_1$



Transferred  $B_1$ [OUR]



Transferred  $B_1$ [ICA]



DryBrush  $A_2$



Transferred  $B_2$ [OUR]



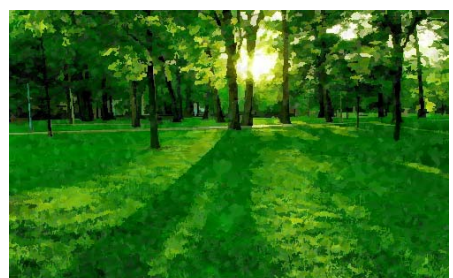
Transferred  $B_1$ [ICA]



Sponge  $A_3$



Transferred  $B_3$ [OUR]



Transferred  $B_1$ [ICA]

Figure 7: Image 7.



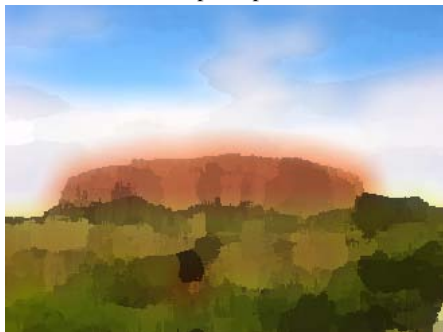
Example Input  $A$



Source Image  $B$



Source Image  $B$



ColorCut  $A_1$



Transferred  $B_1$ [OUR]



Transferred  $B_1$ [ICA]



DryBrush  $A_2$



Transferred  $B_2$ [OUR]



Transferred  $B_1$ [ICA]



Sponge  $A_3$



Transferred  $B_3$ [OUR]



Transferred  $B_1$ [ICA]

**Figure 8:** Image 8.



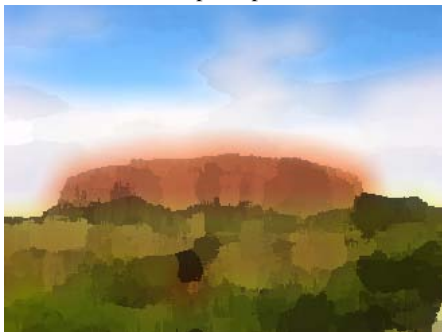
Example Input  $A$



Source Image  $B$



Source Image  $B$



ColorCut  $A_1$



Transferred  $B_1$ [OUR]



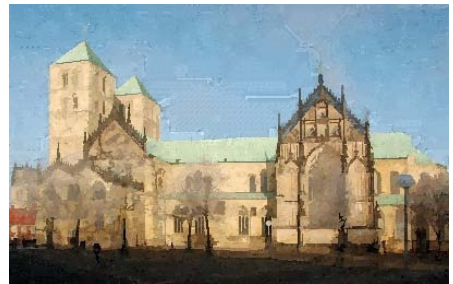
Transferred  $B_1$ [ICA]



DryBrush  $A_2$



Transferred  $B_2$ [OUR]



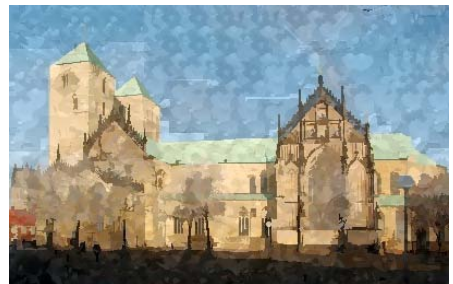
Transferred  $B_1$ [ICA]



Sponge  $A_3$



Transferred  $B_3$ [OUR]



Transferred  $B_1$ [ICA]

Figure 9: Image 9.



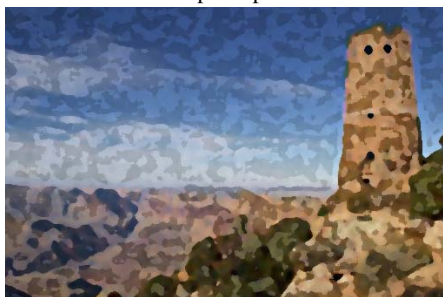
Example Input  $A$



Source Image  $B$



Source Image  $B$



DryBrush  $A_1$



Transferred  $B_1$ [OUR]



Transferred  $B_1$ [ICA]



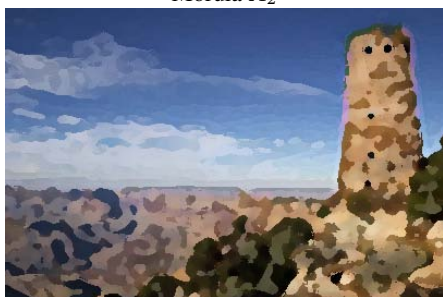
Morula  $A_2$



Transferred  $B_2$ [OUR]



Transferred  $B_1$ [ICA]



Sponge  $A_3$



Transferred  $B_3$ [OUR]



Transferred  $B_1$ [ICA]

**Figure 10:** Image 10.



Example Input  $A$



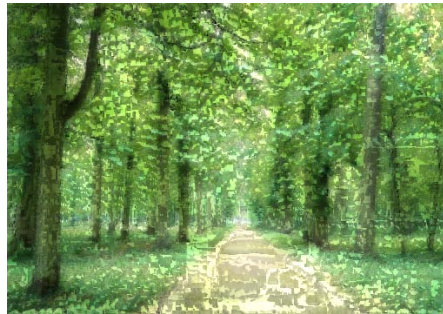
Source Image  $B$



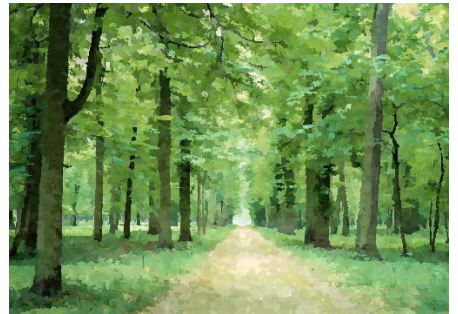
Source Image  $B$



DryBrush  $A_1$



Transferred  $B_1$ [OUR]



Transferred  $B_1$ [ICA]



Morula  $A_2$



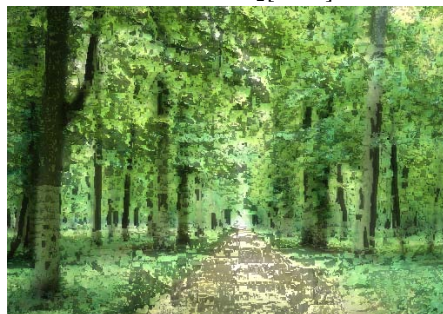
Transferred  $B_2$ [OUR]



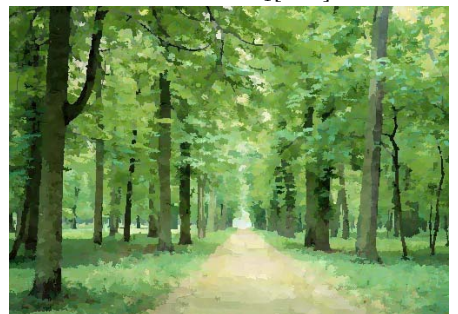
Transferred  $B_1$ [ICA]



Sponge  $A_3$



Transferred  $B_3$ [OUR]

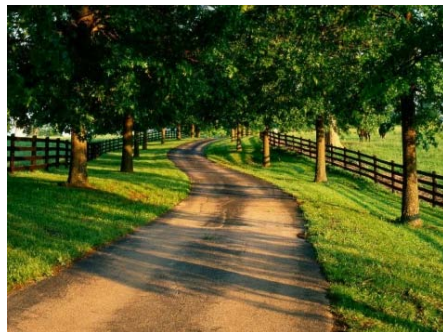


Transferred  $B_1$ [ICA]

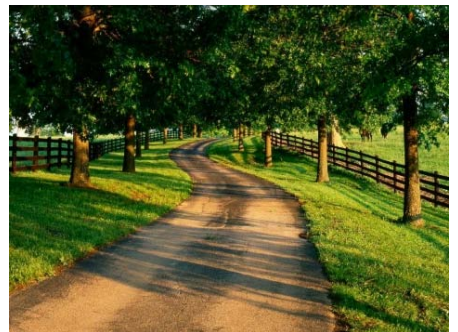
**Figure 11:** Image 11.



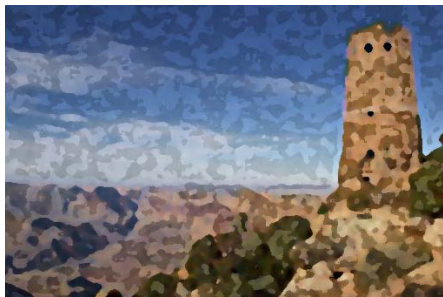
Example Input  $A$



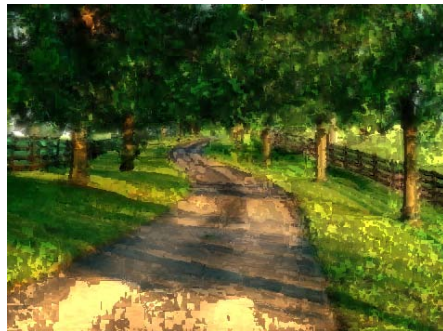
Source Image  $B$



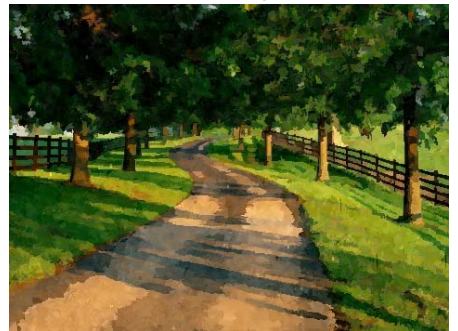
Source Image  $B$



DryBrush  $A_1$



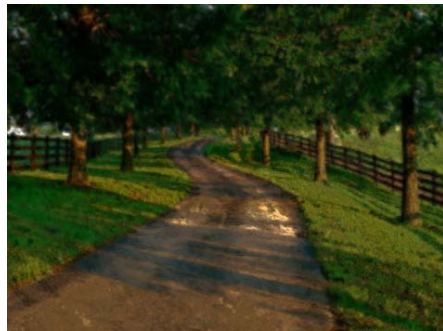
Transferred  $B_1$ [OUR]



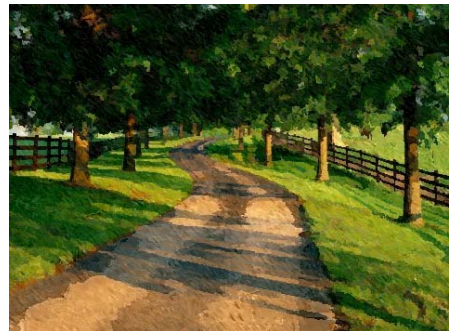
Transferred  $B_1$ [ICA]



Morula  $A_2$



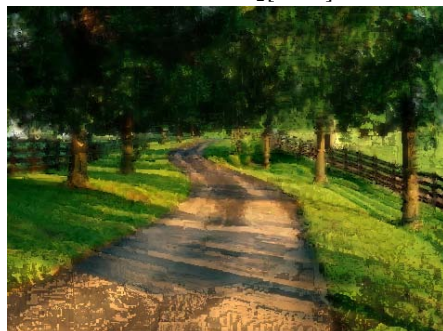
Transferred  $B_2$ [OUR]



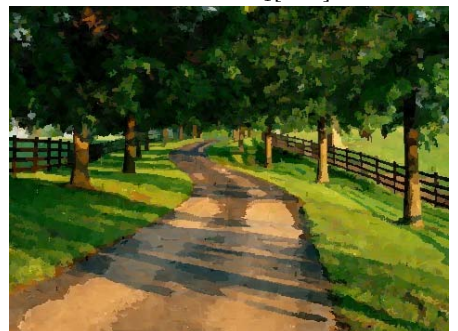
Transferred  $B_1$ [ICA]



Sponge  $A_3$



Transferred  $B_3$ [OUR]

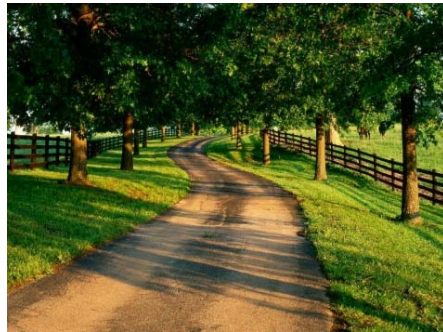


Transferred  $B_1$ [ICA]

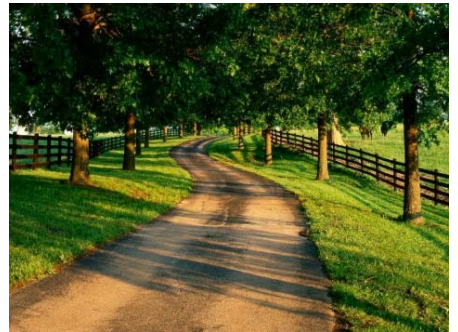
**Figure 12:** *Image 12.*



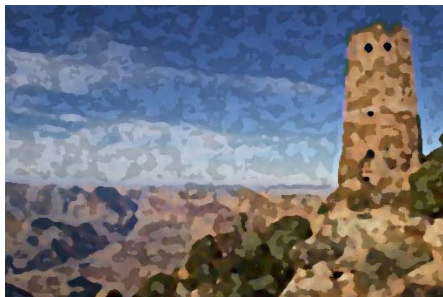
Example Input  $A$



Source Image  $B$



Source Image  $B$



DryBrush  $A_1$



Transferred  $B_1$ [OUR]



Transferred  $B_1$ [ICA]



Morula  $A_2$



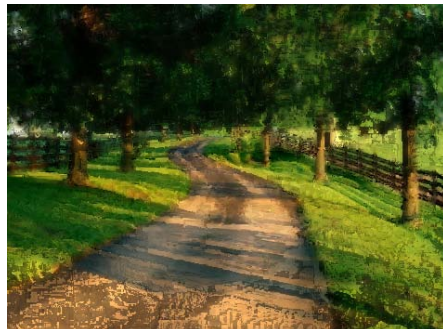
Transferred  $B_2$ [OUR]



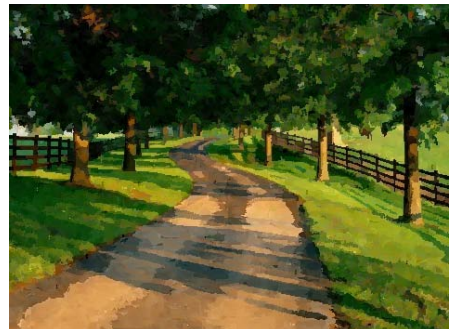
Transferred  $B_1$ [ICA]



Sponge  $A_3$



Transferred  $B_3$ [OUR]



Transferred  $B_1$ [ICA]

**Figure 13:** Image 13.



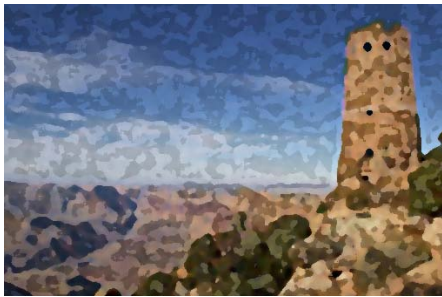
Example Input  $A$



Source Image  $B$



Source Image  $B$



DryBrush  $A_1$



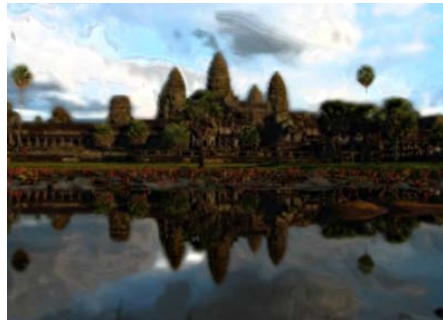
Transferred  $B_1$ [OUR]



Transferred  $B_1$ [ICA]



Morula  $A_2$



Transferred  $B_2$ [OUR]



Transferred  $B_1$ [ICA]



Sponge  $A_3$



Transferred  $B_3$ [OUR]



Transferred  $B_1$ [ICA]

Figure 14: Image 14.



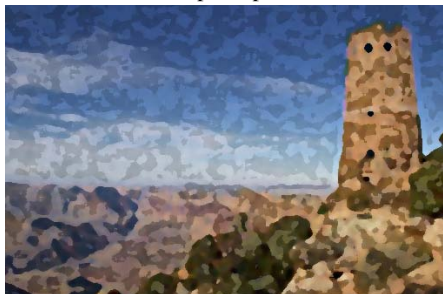
Example Input  $A$



Source Image  $B$



Source Image  $B$



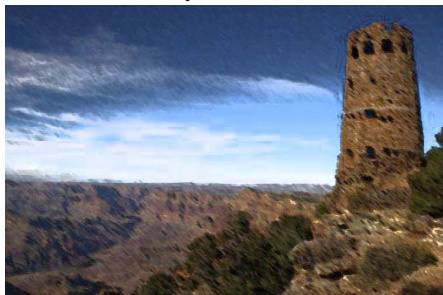
DryBrush  $A_1$



Transferred  $B_1$ [OUR]



Transferred  $B_1$ [ICA]



Morula  $A_2$



Transferred  $B_2$ [OUR]



Transferred  $B_1$ [ICA]



Sponge  $A_3$



Transferred  $B_3$ [OUR]



Transferred  $B_1$ [ICA]

**Figure 15:** *Image 15.*



Example Input  $A$



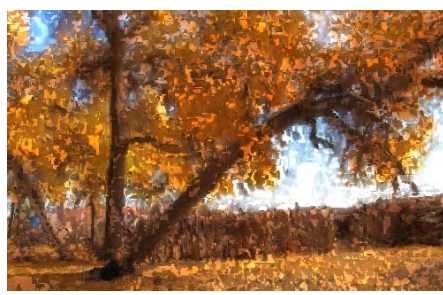
Source Image  $B$



Source Image  $B$



DryBrush  $A_1$



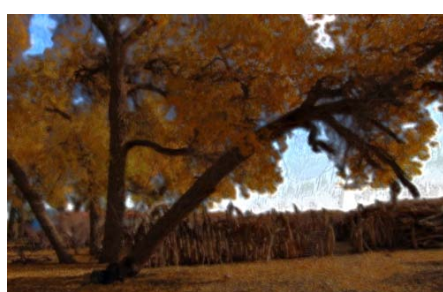
Transferred  $B_1$ [OUR]



Transferred  $B_1$ [ICA]



Morula  $A_2$



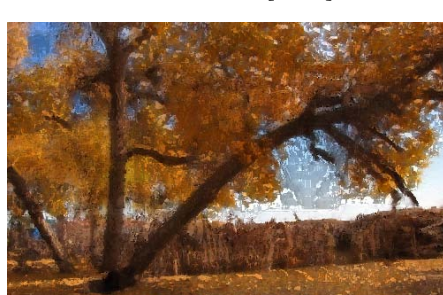
Transferred  $B_2$ [OUR]



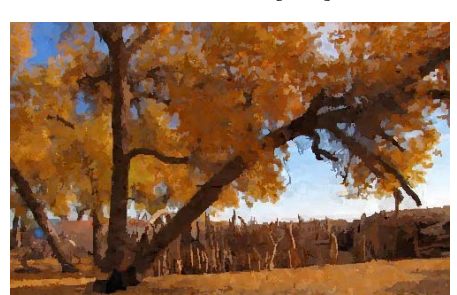
Transferred  $B_1$ [ICA]



Sponge  $A_3$



Transferred  $B_3$ [OUR]



Transferred  $B_1$ [ICA]

**Figure 16:** Image 16.

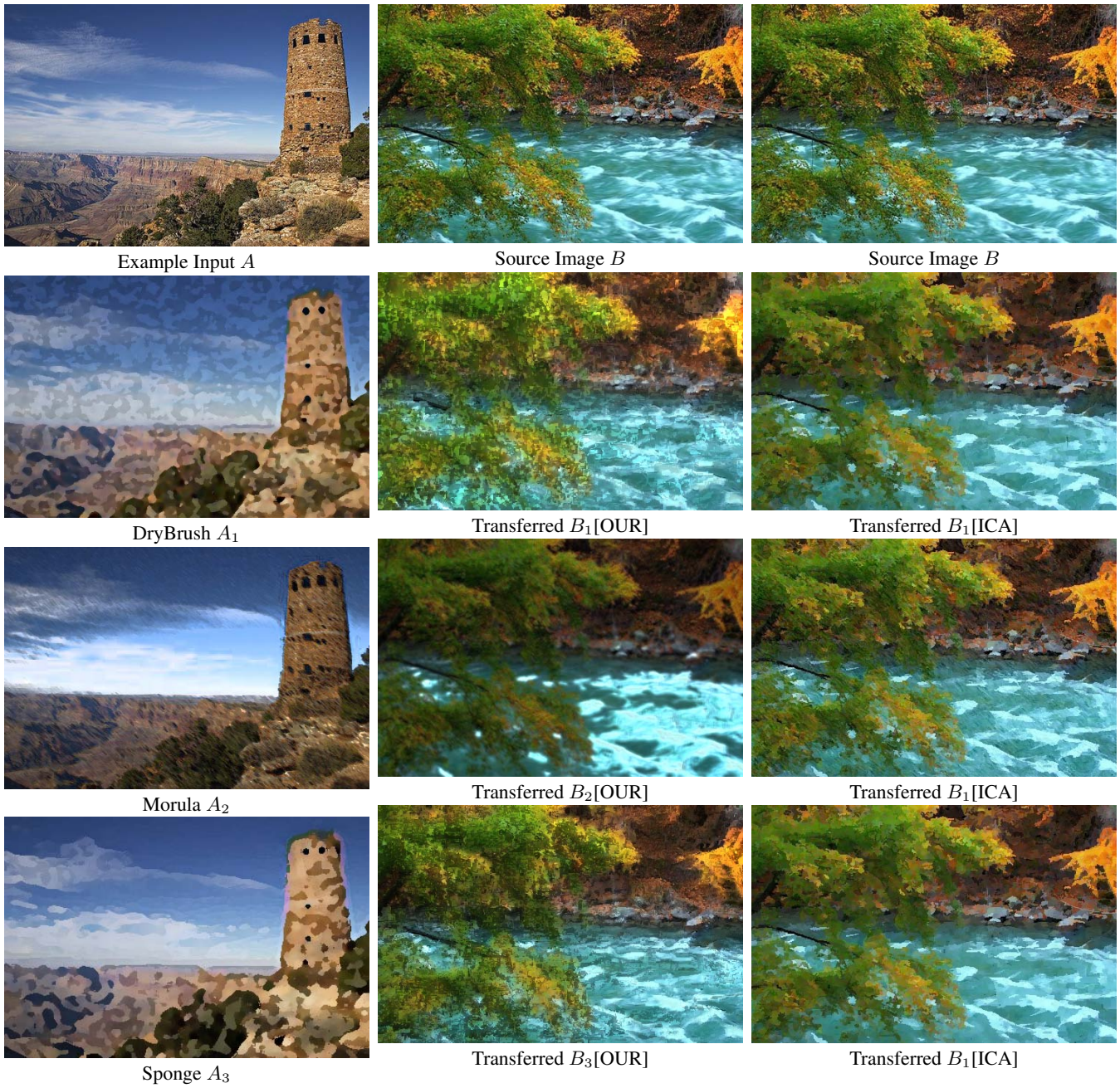


Figure 17: Image 17.



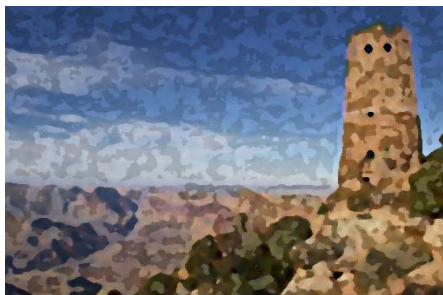
Example Input  $A$



Source Image  $B$



Source Image  $B$



DryBrush  $A_1$



Transferred  $B_1$ [OUR]



Transferred  $B_1$ [ICA]



Morula  $A_2$



Transferred  $B_2$ [OUR]



Transferred  $B_1$ [ICA]



Sponge  $A_3$



Transferred  $B_3$ [OUR]



Transferred  $B_1$ [ICA]

**Figure 18:** Image 18.



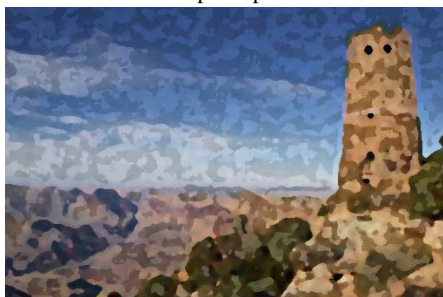
Example Input  $A$



Source Image  $B$



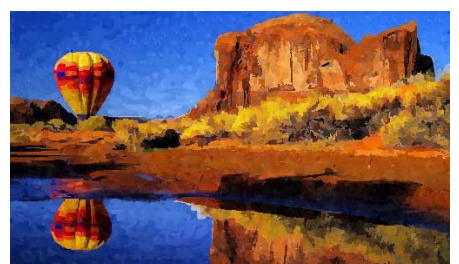
Source Image  $B$



DryBrush  $A_1$



Transferred  $B_1$ [OUR]



Transferred  $B_1$ [ICA]



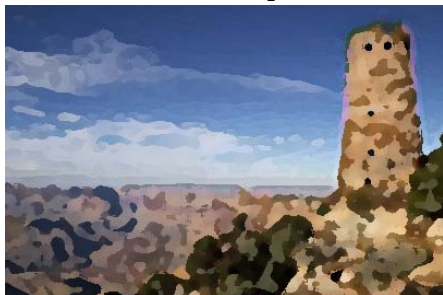
Morula  $A_2$



Transferred  $B_2$ [OUR]



Transferred  $B_1$ [ICA]



Sponge  $A_3$



Transferred  $B_3$ [OUR]



Transferred  $B_1$ [ICA]

Figure 19: Image 19.



Example Input  $A$



Source Image  $B$



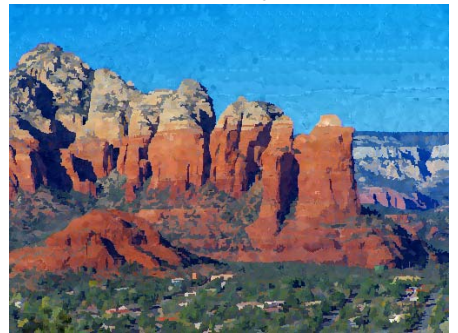
Source Image  $B$



DryBrush  $A_1$



Transferred  $B_1$ [OUR]



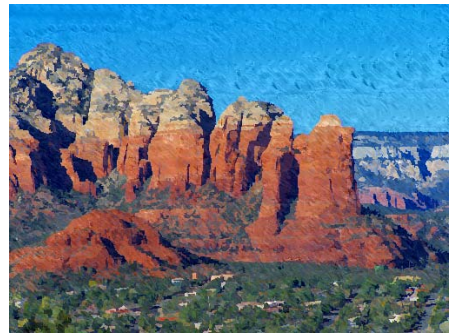
Transferred  $B_1$ [ICA]



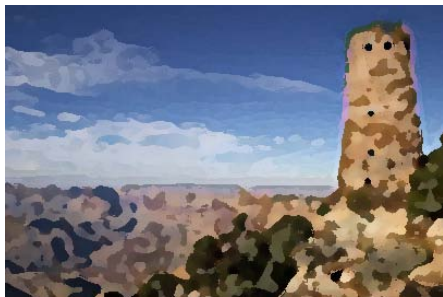
Morula  $A_2$



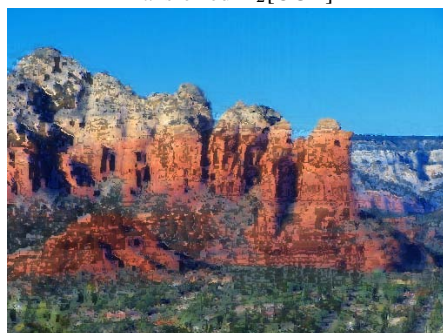
Transferred  $B_2$ [OUR]



Transferred  $B_1$ [ICA]



Sponge  $A_3$



Transferred  $B_3$ [OUR]



Transferred  $B_1$ [ICA]

**Figure 20:** Image 20.



Figure 21: Image 21.