

Robust Color-to-gray via Nonlinear Global Mapping: Supplementary Results

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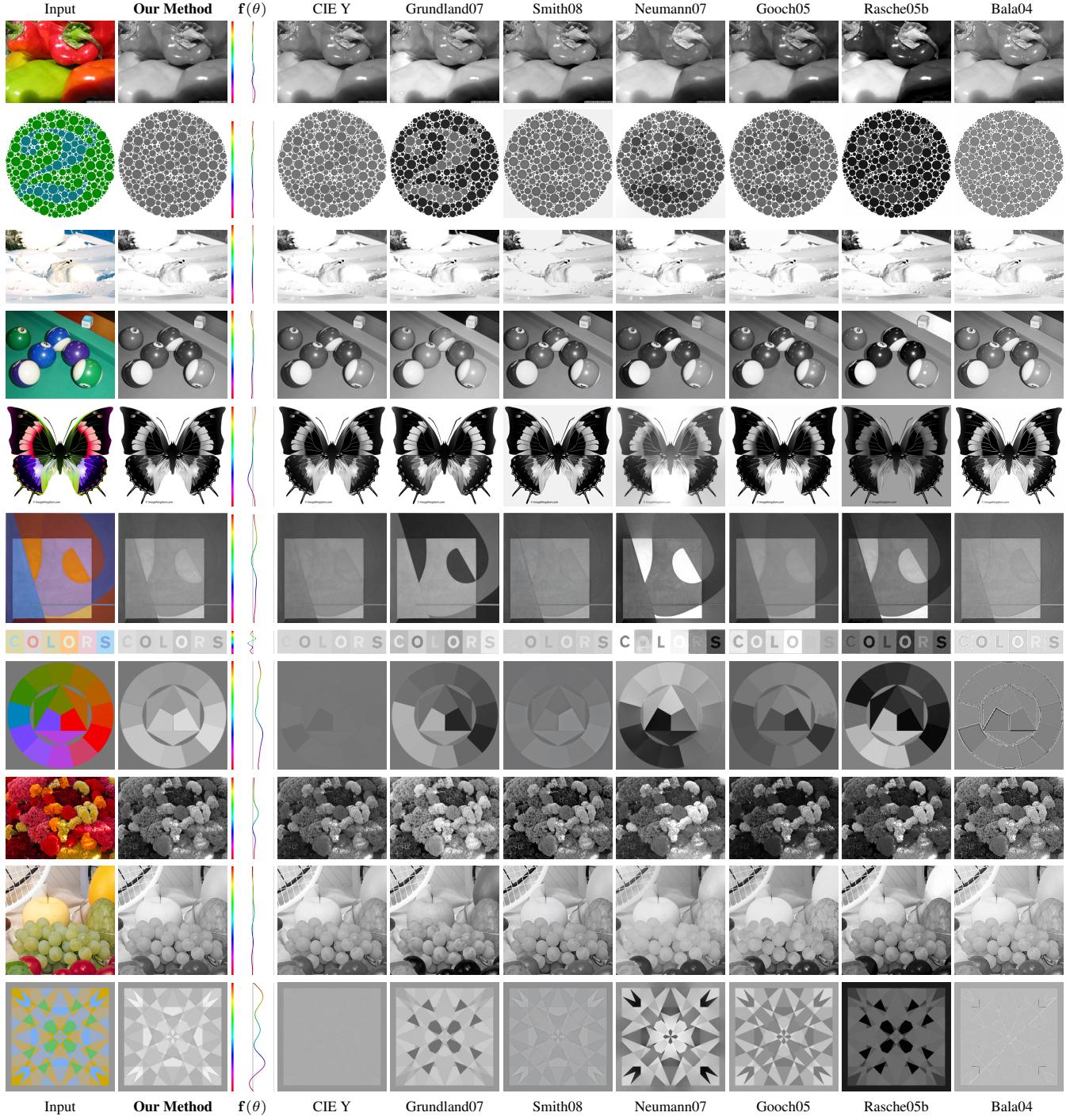


Figure 1: Full comparison table (1/2). For a variety of color images, our conversion algorithm more robustly preserves the visual appearance in the resulting grayscale images than other methods. The default parameters, $\alpha = 1.0$ and $\lambda = N$ (the number of pixels), are used for all images. Resulting images of other methods are courtesy of Čadík [2008].

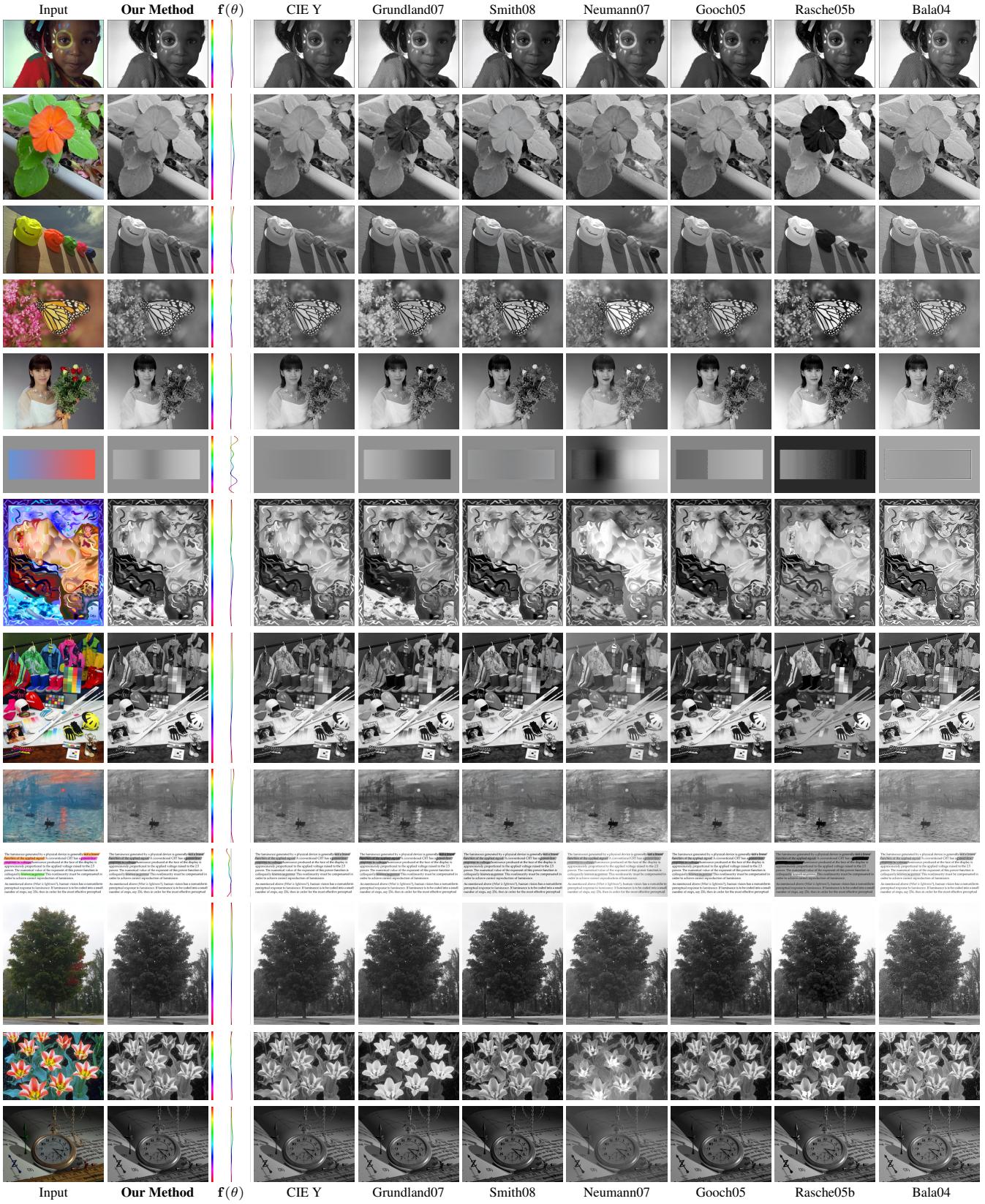


Figure 2: Full comparison table (2/2). For a variety of color images, our conversion algorithm more robustly preserves the visual appearance in the resulting grayscale images than other methods. The default parameters, $\alpha = 1.0$ and $\lambda = N$ (the number of pixels), are used for all images. Resulting images of other methods are courtesy of Čadšk [2008].

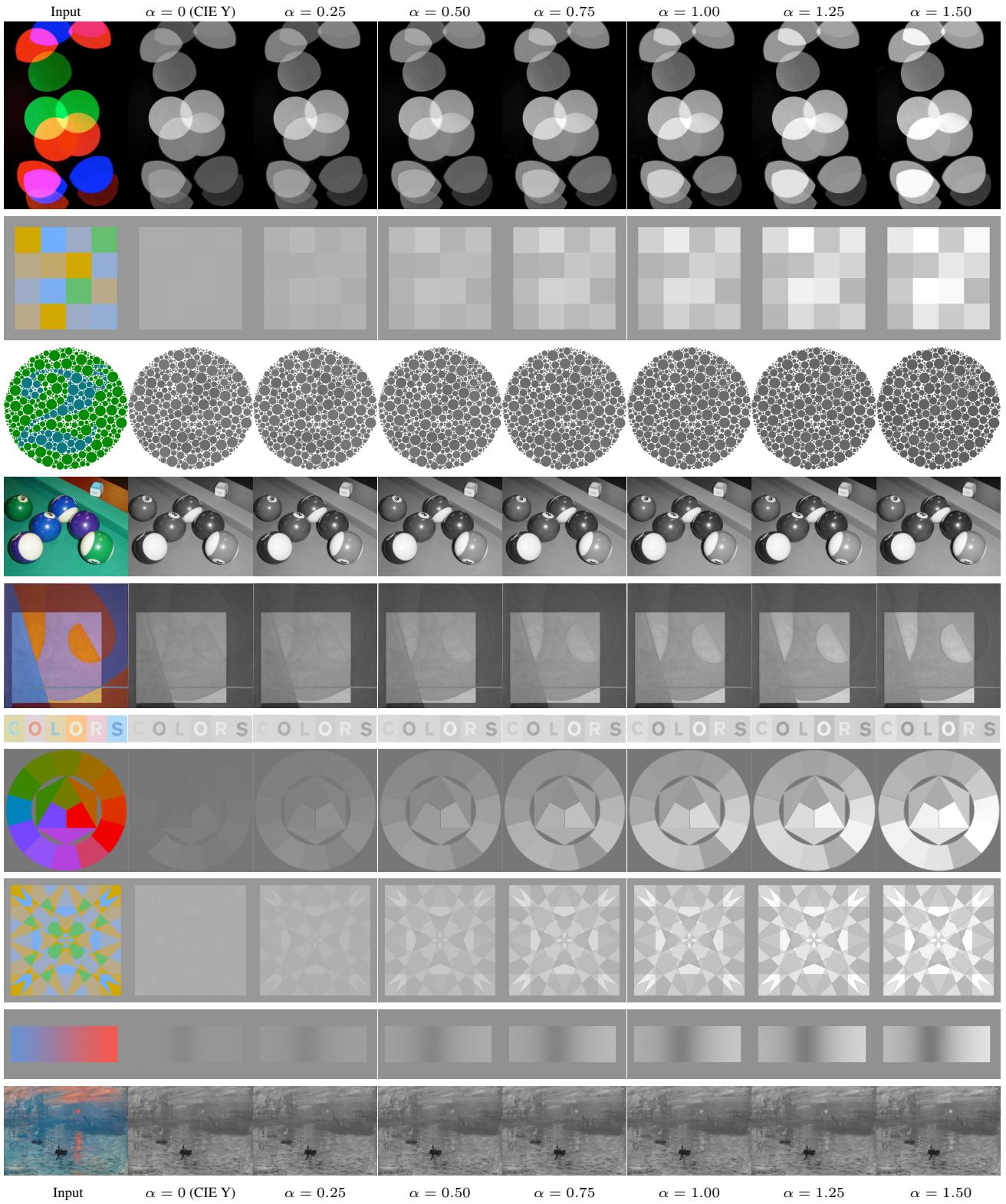


Figure 3: Results using different values of the chromatic influence parameter α . Increasing α exaggerates chromatic features with increased feature discriminability. Smaller values of α retain the original lightness (lightness of the CIE Y channel) of color pixels. Indeed, when $\alpha = 0$, our conversion becomes the same as CIE Y except for small numerical errors. No visual artifact or distortion is introduced with increasing or decreasing α . For the regularization weight, the default parameter $\lambda = N$ is used. The image in the top row is courtesy of Laura O'Halloran (<http://www.flickr.com/photos/mrsenil/3074871806/>).

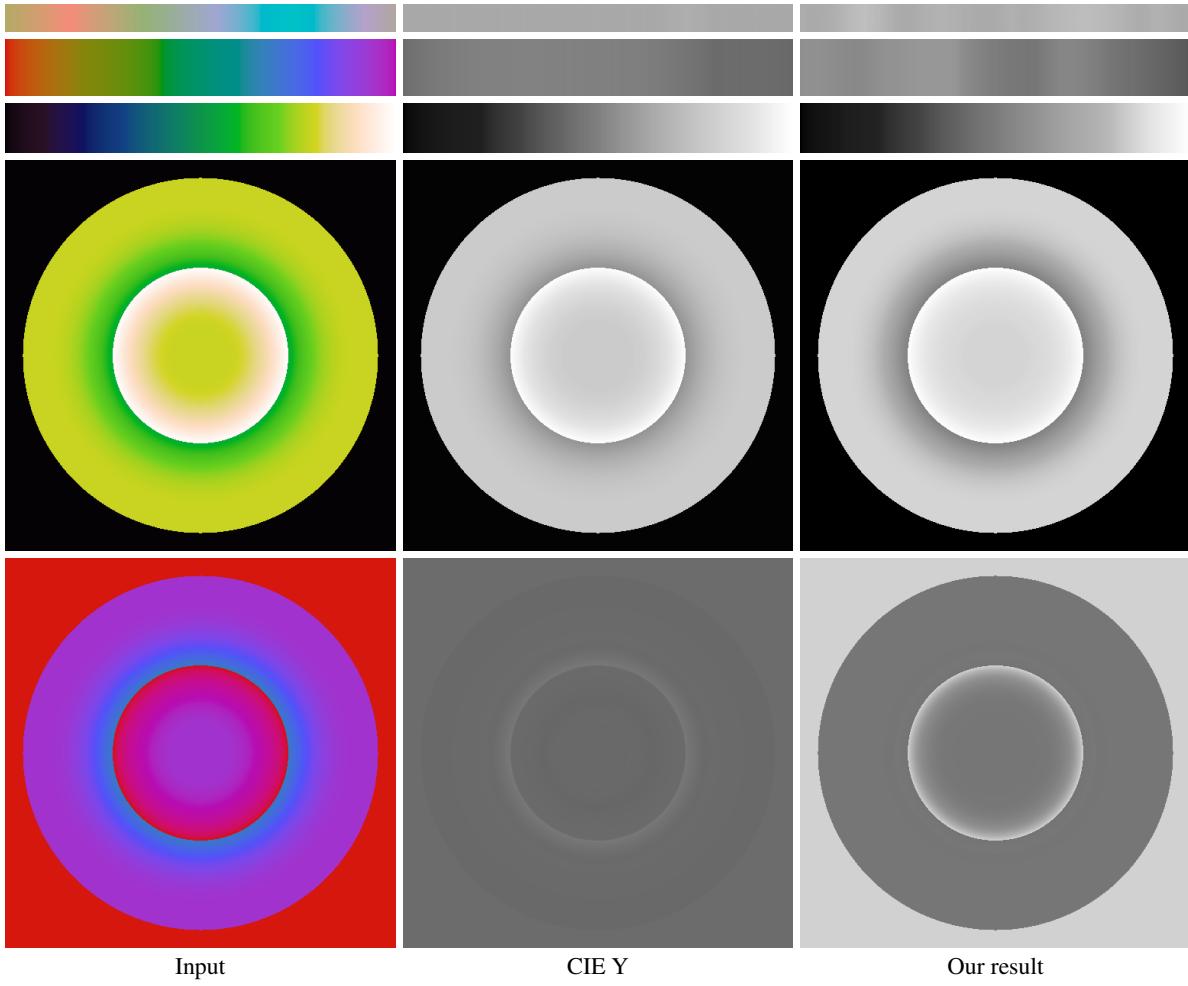


Figure 4: Conversion of images with smoothly changing colors. Our conversion method successfully preserves the visual appearances of images with smoothly changing colors. We used the default parameters in the conversion.

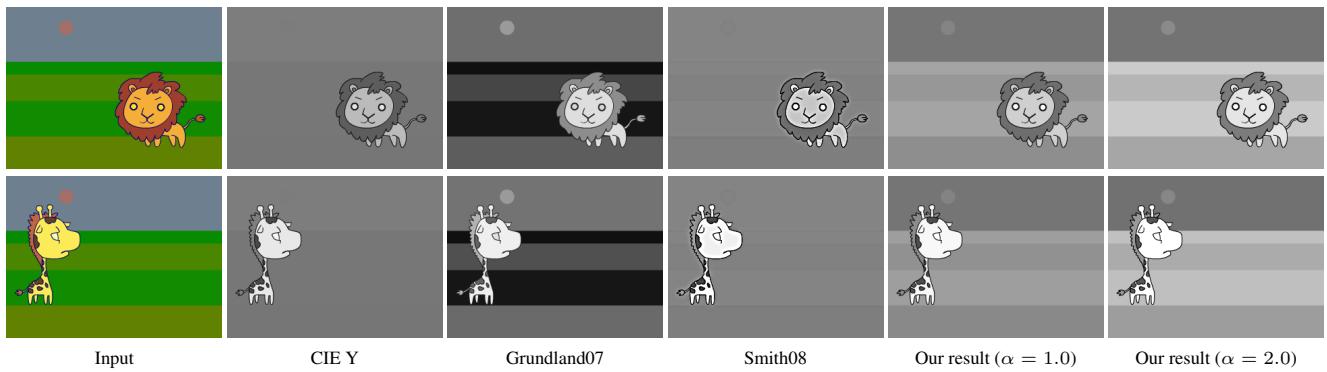


Figure 5: Conversion of cartoon video frames. Our nonlinear grayscale mapping provides consistent lightness while preserving feature discriminability. Our mapping does not perturb constant color regions. Consequently, our results better preserve the visual appearance of video frames than other methods. We used $\alpha = 1.0$ and $\alpha = 2.0$, and default values for other parameters.