Supplementary Material: Photorealistic Style Transfer with Screened Poisson Equation

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Supplementary Material

1. Complete qualitative evaluation This supplementary provides comprehensive qualitative evaluation over the entire dataset via the following link to results.

For each content-style pair we produce four style transfer results using: NeuralStyle (NS) \cite{2}, NS with segmentation (NS+segment) \cite{4}, StyleSwap \cite{1} and CNNMRF \cite{3}. We then compare our post-processing based on Screened Poisson Equation (SPE) output with the post-processing of Matting Laplacian (MT) \cite{4}, on all four style transfer methods. Note that NS+Segment+ML is actually the Deep Photo Style Transfer (DPST) of Luan et al. \cite{4}.

2. Zoom-in Examples Several advantages of our method over DPST are highlighted in Figure 1 which presents zoomed-in examples:

\begin{itemize}
  \item Fine details are better preserved. Our output images do not have smoothing-like artifacts.
  \item Our method is better at preserving image boundaries.
  \item The identity of the content image is nicely preserved.
\end{itemize}

3. Applicability to video An example video \texttt{NYC.mp4} file is attached in the supplementary folder. The color consistency between frames can be observed. The style transfer used in this video is StyleSwap \cite{1}. The style image used to produce this video is shown in Figure 2.

4. End-to-end results: We provide example results of our RealismNet, easy to browse through the following link to results.

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Figure 1: **Comparison with DPST [4].** Two examples where the top row shows (from left to right): the content image, reference style image, DPST result and our SPE result. The bottom row zooms on the red bounding boxes marked on the top row. Our SPE is better at preserving high frequencies and fine textures that lead to a more photorealistic appearance.
Figure 2: The style reference image used in the example video NYC.mp4.

References


