On Neural Artistic Style Transfer for Traditional Chinese Painting

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Abstract—**In this brief note, we present some preliminary results on neural artistic style transfer for traditional Chinese painting.**

Keywords—**traditional chinese painting, artistic style transfer, convolutional neural network (CNN)**

I.   Introduction

Style transfer is the technique of recomposing images in the style of other images. In the past, it takes lots of time for a well-trained artist to redraw an image in a particular style. A frontier paper [1] revealed how it was actually possible to reproduce famous painting styles on natural images. The main idea is to iteratively optimize an image with the objective of matching desired CNN feature distribution, which involves both the artworks style information and the photos content information. With the appearance of a given artwork, their proposed algorithm successfully produces fantastic stylized images [2].

II.   Preliminary Results

Figure 1 is the original photograph that we propose to stylize.

A. *Stylization with Huang Gongwang's Style*

"Dwelling in the Fuchun Mountains," one of the few surviving works by Huang Gongwang (1269‑1354), reflects Huang's idealized image of the landscape transformed through his exploration of nature. Figure 2 is the upper mountain portion of the painting. Figure 3 is the stylized image with the style of Figure 2.

B. *Stylization with Zhang Daqian's Style*

"Snow Upon Spring Mountains," a magnificent ink-and-colour painting by Zhang Daqian (1899-1983), depicts an undulating mountain range with its peak dusted snow. Figure 4 is extracted from the snowless part of the mountain in the painting. Figure 5 is the stylized image with the style of Figure 4.

III.   Conclusion

In [3], the authors comment, "due to the inherently different painting techniques adopted by Chinese and western paintings, directly applying existing methods [style transfer methods] cannot generate satisfactory results…." In this note, we demonstrate a few counterexamples to illustrate the possible effectiveness of directly applying the style transfer method in [1] to traditional Chinese painting.

Figure 1 to Figure 5 (left to right)
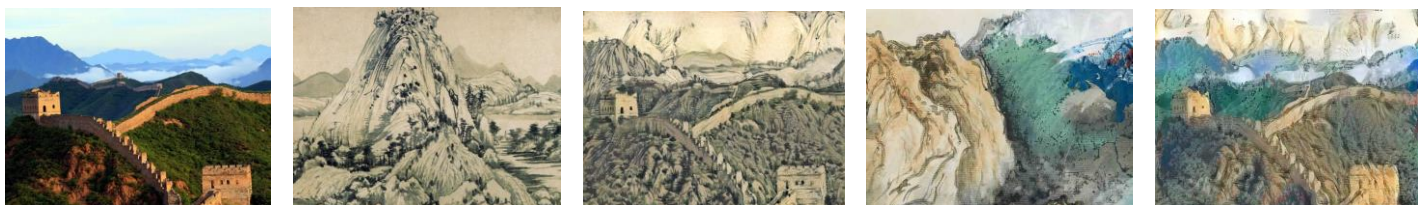
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