

Supplement of Eliminating Gradient Conflict in Reference-based Line-Art Colorization

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Fig.1: qualitative results of anime colorization. “Ref” stands for “reference”. “Skt” indicates “sketch”.

A More Results

To demonstrate the impressive performance of SGA, we add the anime colorization results shown in Fig. 1. Not only is the style in reference images appropriately transferred, but also the outline of sketch images is highly persevered, even though there exist some divergences of shapes between sketch and reference.

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Additionally, we find that SGA performs not bad when facing some huge semantic gap between reference and sketch, through conducting an extreme case, *i.e.*, use an out-of-domain reference input to test the generalization in Fig. 2. We use the SGA pretrained on the anime dataset. The results show that SGA has a better generalization than SCFT due to the correct style transferring and high outline preservation in this case.

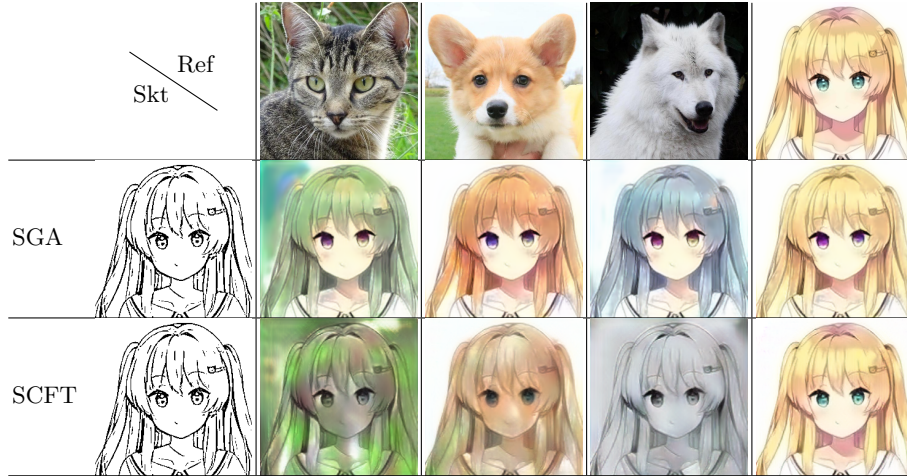


Fig. 2: Visualization of colorization results with out-of-domain reference input, which indicates SGA has a better generalization than SCFT. “Ref” stands for “reference”. “Skt” indicates “sketch”.

Besides, the last column of Fig. 2 shows that SCFT performs extremely well in self-reconstruction, which implies SCFT is suffered from tending to learn a trivial solution. The $\mathcal{L}_{rec}$ during the training process showed in Fig. 3 suggests that the SGA has a higher reconstruction loss compared with SCFT. These evidences shows that the stop-gradient operation helps the model to attain a generalization solution, similar to the SimSiam.

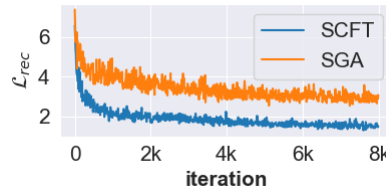


Fig. 3: The $\mathcal{L}_{rec}$ during the training process on anime dataset.