

Example-Based Image Color and Tone Style Enhancement

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Original photo by Andriod Phone



By Photoshop



By Windows Photo Live Gallery



By Picasa



Ground truth



Our result

Figure 1: An informal user study for comparing our method with other existing tools. Existing photo enhancement tools have certain automatic functionalities, such as "Auto Color" and "Auto Contrast". However, these auto operations have limited correction power. This is in contrast with our method, which takes advantage of the prior knowledge to accurately perform color and contrast corrections. Another major difference is that most of these tools perform corrections in a global manner while our method is capable of spatially varying local adjustments. When conducting the comparison shown here, we showed the high-quality photo (ground truth) to multiple users, and asked them to manually tune the "Color temperature", "Tint", "Saturation" as well as "Contrast" to make the result look as close as possible to the ground truth. However, most of the manually tuned results are still not as good as our automatic result.

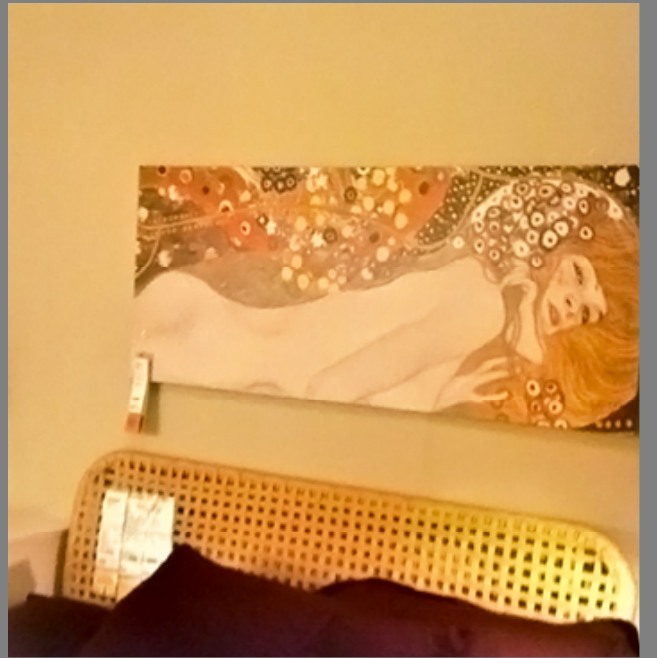


Figure 2: Two enhancement examples. **Left:** Original photos. **Right:** Enhanced results. Both original photos were taken by iPhone 3G.



Figure 3: Another two enhancement examples. **Left:** Original photos. **Right:** Enhanced results. The top one was taken by iPhone 3G while the bottom one was taken by Android Nexus One.



Figure 4: Two different styles of enhancement learned from photographers. **left:** original photos, **right:** enhanced results.



Figure 5: Comparison between our automatically enhanced results and manually enhanced results by a photographer for the two different styles. The manual result was not part of the training data. **Left:** original photos. **Middle:** our results. **Right:** results by Photographer. Note that our models were learnt from the same photographer, indicating the consistency between our learned models and the photographer's implicit styling rules.