Lab 3.1: Image Comparison

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1 Introduction

The task for this lab was to produce a feature vector and make comparisons between a set of images. By picking a image and use comparison of the feature vector the other images can be ranked.

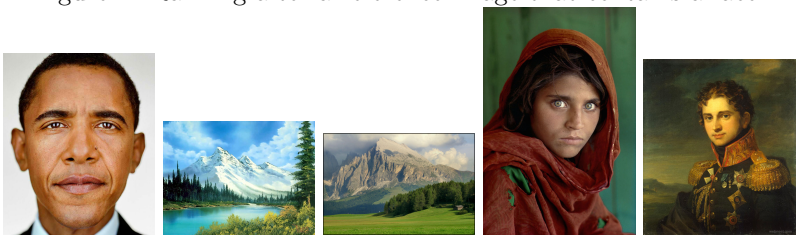
2 Method

To simplify the development process matlab was deemed the most suitable software for image analysis. Most calculations checks the illumination of color distribution over a certain area and the inbuilt Viola Jones algorithm were used to find faces. GrayWorld were used to normalize the images. Features like color were divided into their color channels. So a RGB color would be three features. A weight were used for faces to rank them higher. There were 14 features in the vector.

3 Result

The software had problem ranking faces correctly as can be seen Figure 1. Leftmost image is the reference, the rest are ranked nearest in comparison to this image from left to right. As can be seen landscapes are ranked higher than images with actual faces. This is because the face detection algorithm is lacking and though that it was a face in the images with landscape.

Figure 1: Ranking after a reference image that contains a face.

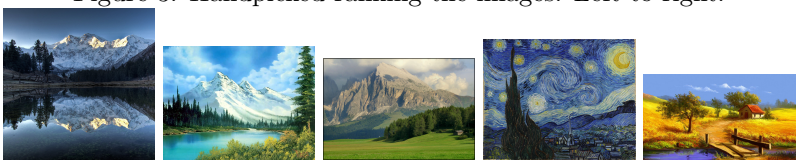


The landscape comparison fared not so well either with the highest ranking picture being food and have a completely different color distribution. Still two of the top four images are landscape. A weight or better analyze of the color distribution would maybe give a better result. Analyzing the edges would also be a interesting feature to look at.

Figure 2: Ranking after a reference image that contains landscape.

One could argue that a more ideal ranking would be as the one Figure 3. With images either containing a landscape or similar color distribution.

Figure 3: Handpicked ranking the images. Left to right.



4 Conclusion

The results have many flaws with the highest ranked image having low to none features similar to the reference image. Still among the top four ranked images, some had distinctive feature in common with the reference image.