Aesthetic Assessment of Photographic Images

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I. Abstract

We are going to propose software for automatic aesthetic assessment of photographic images.In this assessment, we will use computational approach and compare it with actual human assessment.Our software will sort images according to their aesthetic scores and can also remove poor quality images automatically. We are trying to identify important features or parameters that distinguish high and low quality images.

To understand high level semantic features, we identified calculable features for automatic assessment of photography aesthetics using machine learning methods. The calculation of features depends heavily on the identication of the subject in photographs. With the subject identied, we dened and implemented various features to analyze various aspects of a photograph.

II. Introduction

There is no unanimously agreed standard for measuring aesthetic value.Hence evaluating photo aesthetics proved to be challenging because of several reasons.Distinguishing 'images as high or low quality' is an abstract concept.Data available in images has been increasing exponentially and the solution for this is to select high aesthetic quality images automatically. Besides, there is rising need of organizing huge data without human efforts.

III. Problem Statement

- Assessing the quality of images from their features using computational approach and comparing it with actual human assessment.
- Making sorting of images simple in areas like websites and removing poor quality images automatically by software.

IV. Deliverables

Output of our project is the set of images with their aesthetic quality percentage. These results can be used in making system learn human perception about images, suggest good photography automatically and also to create an interface for instant photo quality rating system and categorization.

V. Literature survey

- Studying Aesthetic Photographic Images using a computational approach by R. Datta el al., used a set of low-level features followed by a classifier to achieve photo quality assessment.
- Evaluating photo aesthetics using Machine Learning by D. Pogacnik et al., used high-level semantic features that distinguish high quality photos from low quality snapshots.
- Evaluating Rule of Thirds in Photographs and Paintings by S. A. Amirshahi et al., studies the composition of object in an image on rule of third line.
- Assessment of photo aesthetics with efficiency by Kuo-Yen Lo et al., demonstrates an efficient approach to assess photo quality without adopting any computation consuming techniques, such as subject detection or image segmentation. s

VI. Methodology

- Data Acquiring from Survey - collect the images data including human rating from already existing survey like photo.net and dpchallenge.com.
- Computable Features Identification - identify all the features that are computable by the machine and also affect the image assessing quality by human.
- Feature Extraction - extract the features identified from all the images.Also,it includes implementions of rule of thumbs like 'Rule of thirds','Golden Ratio' with the help of low level features.
- Machine Learning - make a classifier that can qualitatively distinguish between pictures using training datasets.
- Aesthetic Score Prediction - make a regression model that can quantitatively predict the aesthetics score in terms of predefined ranges of aesthetics scores.
- Practical Application - applying software in practical use case.e.g. organizing images from desktop,giving suggestions for good photography.

VII. Work Plan

We are acquiring data from online resources and surveys.We have planned it to complete its first stage by 25th February.From there onwards, we will identify computable features and organize our data accordingly till 29th February.Then we will apply feature extraction methods for identified features.This is supposed to be completed by 12th March.The machine learning module will be carried out before 26th March.Then aesthetic score prediction will be implemented till 4th April.Finally,our software will be applied before 13th April. Ganesh has responsibilities for ”Data Acquiring”,”Feature Extraction” and ”Aesthetic Score Prediction” modules.Varun has responsibilities for ”Feature Identification”,”Machine Learning” and ”Practical Application” modules.

VIII. References

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