

CS512 - Computer Vision

Prof. Gady Agam

Project Proposal Smile and Frown Detection

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Overview

The difference between a 'bad' photo and a 'good' photo is often a matter of whether or not the person in the photo is smiling or frowning. With the help of feature recognition and corner detection, smiles and frown can be identified in a photo. We want to automatically detect a smiling subject in a picture. Our intended use is in the digital photography industry, where this algorithm can be applied to automatically select the best frame in a set of similar frames.

Keywords: feature detection, feature recognition, corner detection, smile detection, frown detection

Introduction

The most common facial expressions which we observe in humans is a smile and a frown. The smile gives a favorable expression on others and makes one more approachable whereas a frown does just the opposite. A smile bespeaks a person's joy, felicity, admiration or gratification. However a frown depicts a person's misery, grief or sadness. The mental state of a person is judged by detecting smiles or frowns. It has many applications in video cameras, mobile phones, security systems, distance learning systems, video conferencing, interactive systems like gaming etc. The detection starts with the facial recognition. The main advantage of the smile detection is it ensures whether smiles are detected by the camera or not. Generally in the present system, capturing the decision boundary of spontaneous expressions is very difficult.

Proposed Solution

There are mainly two parts for the proposed design, i.e., pre-processing and expression detection, respectively. The preprocessing includes:

- 1) face detection
- 2) eyebrow and mouth location
- 3) smile and frown detection
- 4) expression detection

We use Haar – cascade to detect faces and use feature detection techniques to identify features.

The expression detection is the claimed topic for smile and frown detection using MCF algorithm

Fig.1 explains the procedure of our proposed solution

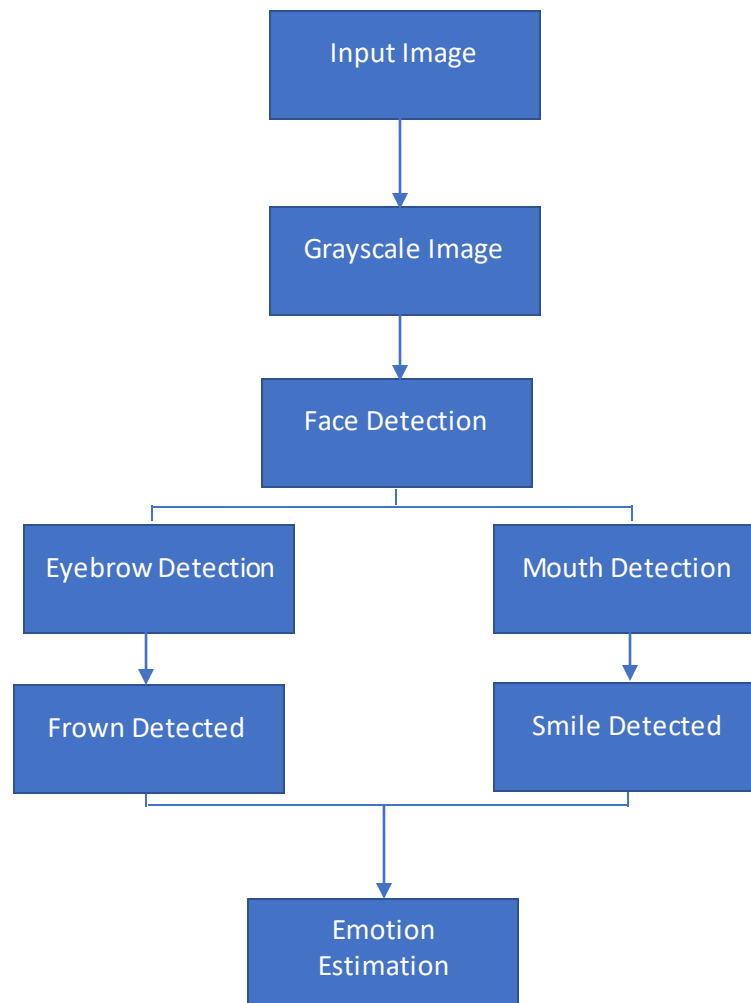


Fig.1 Smile and Frown Detection

Division of work

Adithya Sreenath Chandrashekarapuram: Smile Detection

Alisha Anjum Aleem : Frown Detection

Collaborative : Face Detection, Emotion Analysis, Evaluation.

References

[1] An-Chao Tsai, Ting-Wei Lin, Ta-Wen Kuan, K. Bharanitharan, Jih-Tso Chang and Jhing-Fa Wang, 'An Efficient Smile and Frown Detection Algorithm', International Conference on Orange Technologies (ICOT), 2015