Expression Analysis using kernel Extreme Learning Machines

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1. INTRODUCTION

Expression analysis is a topic covered under affective computing which is under a lot of research in the field of computer vision. We propose an expression analysis algorithm that utilizes kernel ELMs and CNNs to determine the state of the expression. The expressions include sadness, happiness, fear, anger, disgust, surprise and neutral. The first step is to detect the face in the image and to do that we use the DPM face detector and for extracting the features we use the VGG face network. Once we have the features of the face selected in the image we use kernel extreme learning machines (ELM) due to its high speed of execution and the accuracy. Seven ELMs are needed to obtain predictors for seven expressions. The prediction is then performed using a fusion network that obtains features from two independent networks. Along with the input from the two networks, scores are taken from all the ELM models as input, to enhance accuracy.

2. REFERENCES

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