Web inference model with weighted matrix algorithm based facial emotion using artificial feed forward neural networks

January 2016 International Journal of Control Theory and Applications 9(36):305-313

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Abstract

Human emotions get changing at all the fraction of life; the emotions detection can be used in various domains like person identification and authentication purposes. We extend the problem of facial emotion detection to access media store and playing songs and videos according to the emotion of the user. The proposed method captures the user image through the webcam attached to the user machine; the captured image is submitted to the inference model. At the inference model, the input image is preprocessed to enhance the picture, and then the image is split into a number of integral images. For each integral image, an interesting point is generated using speed up robust features. The computed interest point is converted into a weight matrix which represents the strength of features at all the regions of the face. With the generated weighted matrix of features extracted from the facial image, the method generates an artificial neural network with eight layers. Each layer of neural network has a number of neurons with dedicated functions to compute the similarity and feature weight. Each layer of the system denotes the distinct emotion and according to the number feature vectors available in the training set for each emotion, there will be a number of neurons will be generated. Each neuron will be assigned with computed weighted matrix, and each neuron computes the similarity measure to produce an output to the next layers. The proposed model maintains feature for eight different emotions of the distinct user, based on that; first the user identification is performed, and then the emotion is identified. The proposed approach has produced effi cient results compared to earlier methods.