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Deciphering of Social Signals of Iris

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ABSTRACT
In today's advanced version of world, the social signal communication must be decrypted by the computers. Humans interact with each other smoothly, without obvious effort. Social signaling is defined as any action or overt behavior, regardless of its form that is carried out in the presence of another person. A social signal is a form of communication, such as any eye roll, the silent treatment, walking away, or a smile. These signals are vocal sounds, body movements such as gestures. In this type of signals let us consider the movement of iris, that is eyeball to convey the information in data format to the system. Our project is to decode the social signal of iris into text message or commands using image processing techniques.

Keywords: Communication, Social signals, Iris, Decipher, Image processing,

I. INTRODUCTION

Automation is a term for technology applications where personal input is reduced. These include business process automation (BPA), IT automation, personal applications such as home automation and so on.

AI systems will be able to automate robot configuration and use predictable and probable processing to learn and interact. The most complex level of automation is artificial intelligence (AI) automation. The addition of AI means that machines can "learn" and make decisions based on past experiences they have encountered and analyzed. For example, in customer service, enabled virtual assistants can reduce costs while empowering both customers and human agents, creating relevant customer service information.

1.1 SOCIAL SIGNALS

Communication signal is a form of communication, such as eye opening, silence, movement or a smile.

People interact seamlessly, smoothly, and without obvious effort. Social media is the basis of this highly effective communication. These are signals of speech, gestures such as touch, exploitation, and combinations.

1.2 SOCIAL SIGNAL PROCESSING:

Social signal processing (SSP) is a computer platform intended to model, analyze, and integrate social symbols into human-human interactions with human machine. or structures that influence the behavior or inner state of other people "communicative or educational features that provide information about social realities" or "actions whose function is to bring about a particular reaction or involvement in a process" Definitions may seem different, but there seems to be at least three points.

Consistently, the book is organized into four main sections where the first three focus on the three problems described above while the fourth introduces the current application of SSP technology.

1.3 VIOLA JONES ALGORITHM

The Viola-Jonas object detection framework is an object recognition framework which was projected in 2001 by Paul Viola and Michael Jones. Although it can be trained to detect a diversity of object classes, it was aggravated chiefly by the problem of face detection.

Problem to solve face detection in image. One can easily do this, but the computer needs precise and hindrances. To make the work manageable, Viola-Jones needs a full view of the front straight face. So, in order to be seen, all faces must face the camera and should not be tilted on either side. Although it seems, these constraints can reduce the performance of the algorithm in some way, because the acquisition step is usually followed by a precautionary measure, in fact these limitations in configuration are quite acceptable.

2.2 DESCRIPTION TYPES AND EVALUATION

The characteristics of Viola–Jones algorithm which make it a good detection algorithm are:

- Robust – very high exposure rate true-positive rate & very low false-positive rate always.

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- Real time – For realistic applications at least 2 frames per second must be processed.
- Face detection only not recognition - The goal is to distinguish faces from non-faces finding is the primary step in the acknowledgment process.

The algorithm has four stages:

1. Haar Feature Selection
2. Creating an Integral Image
3. Adaboost Training
4. Cascading Classifiers

The features required by the acquisition frame include the total number of image pixels within the rectangular areas. Thus, they are similar to the works of the Haar basis, which have previously been used in the field of image-based discovery. However, since the features used by Viola and Jones all depend on more than one rectangle, they are generally more complex. The diagram to the right shows four different types of features used in the framework. The value of any given element is the sum of the pixels inside the clear rectangle minus the number of pixels inside the shaded rectangle. Rectangular features of this type are older compared to others such as direct filters. Although they are sensitive to direct and horizontal features, the answer is very difficult.

II. PROPOSED METHOD

The flow chart consists of seven steps where the entire process is explained which are described below.

2.1 Read image:

An image is taken as input which is further proceeded to face detection and this input image is of any type. This input image in RGB image is renewed as a grey image to detect head.

Figure 1: Input image.

2.2 Remove the noise:

The superfluous information in the input image is removed using image augmentation techniques like grey image conversion, black and white image conversion.

2.3 Detect head:

By means of Viola - Jonas's algorithm(Section 2.2) the head of the object is

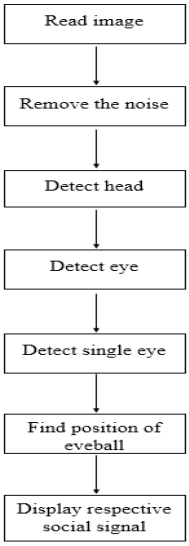

Figure 2: Input image.

The flow chart consists of seven steps where the entire process is explained which are described below.

By means of Viola - Jonas's algorithm(Section 2.2) the head of the object is detected in this step. The head is identified and it is marked with a red colour rectangular Box. Furthur Application it is cropped with the help of boundaries of Rectangular box

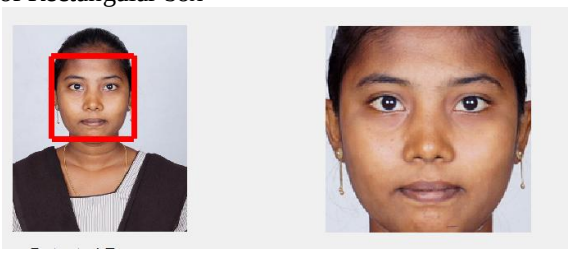

Figure 3: Detecting head.

2.4 Detect eyes:

With usage of Viola - Jonas's algorithm(Section 2.2) The cropping methods are used to detect the eyes in the input image.

Figure 4: Detecting eyes.

2.5 Detect single eye: T

Now it is easy to crop the single eye to grasp Social signals from the eye .So the he same mechanisms are used to detect and crop the single eye which is use in 2.3 and 2.4 from the input image.

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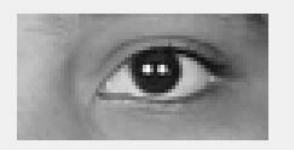

Figure 5: Detecting single eye.

2.6 Find position of eyeball:

The proceeding Cross correlation is used for the decoding of Eye position . Correlation is the process of moving a filter mask often referred to as kernel over the image and calculating the sum of products at each location. Correlation is the function of dislocation of the filter. In other words, the first value of the correlation corresponds to zero displacements of the filter, the second value corresponds to one unit of displacement, and so on.In the converted grey or black and white image the iris is detected from the single eye. Here the position of eyeball gives the final step of the process.

Figure 6: Harr features of image.

Display respective social signal:

The respective command is given as an output from the list of few commands which resembles a specific social signal. For every social signal there are few lists of commands which are used to define it.

III. RESULTS

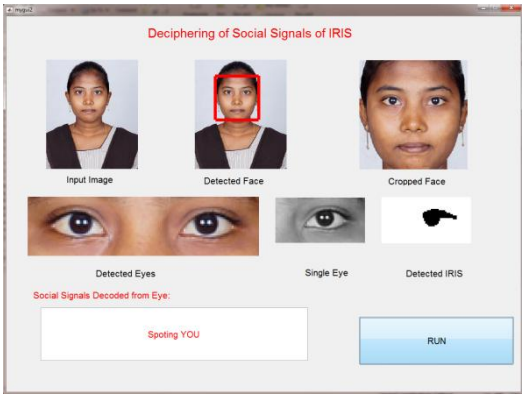

Figure 7 Case Study 01

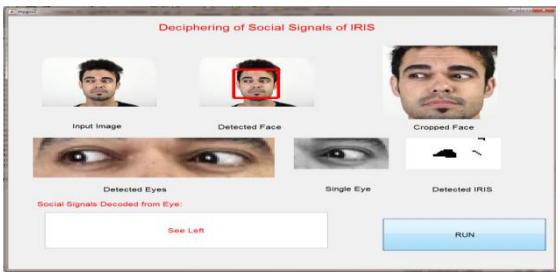

Figure 8 Case Study 02

IV. CONCLUSION

Therefore, important aspects of public relations may be overlooked. For example, many current SSP methods are monomodal, even if social behavior is multimodal and the integration of multiple signals is an important aspect of public perception in humans. In addition, many of the SSP methods introduced so far deal with laboratory data created in manufacturing environments. Therefore, it is difficult to assess the true effectiveness of methods that may be acceptable to certain test criteria set out.

For the above reasons, the remaining part of this section discusses four challenges facing researchers in the field, which we believe are important issues that need to be addressed before research in the field can move into its next phase in the distribution phase.

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