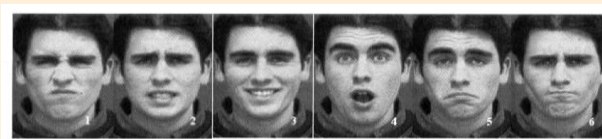


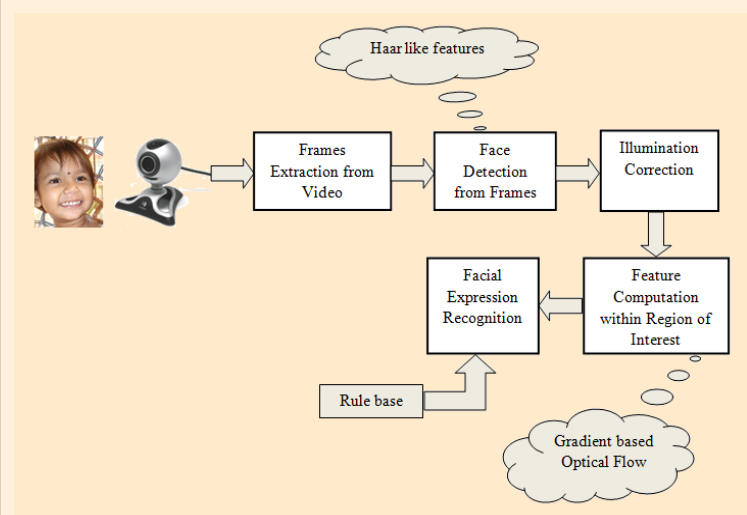
# AUTOMATIC FACIAL EXPRESSION RECOGNITION SYSTEM (AFERS)

Automatic Facial Expression Recognition System developed by CDAC, Kolkata can recognize six basic emotional facial expressions of human beings (irrespective of gender and age) such as happiness, disgust, fear, surprise, anger and sadness from video sequences in online mode using camera followed by saving the video for offline analysis at a later time.

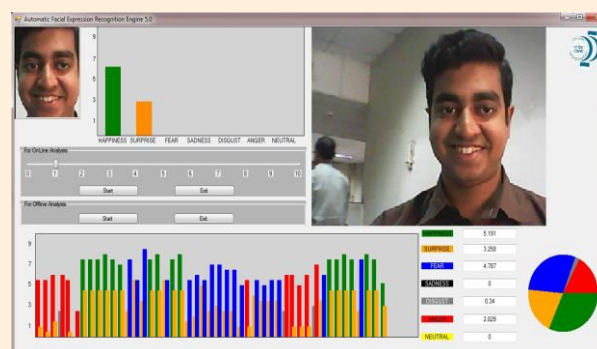
From the work of Ekman and Friesen (1977), it has been proposed that emotion-specified expressions have corresponding six basic prototypic facial expressions.



Six basic prototypic facial expressions



Flow diagram of AFERS Software developed by C-DAC, Kolkata



AFERS Software Frontend Screen

Accuracy of (AFERS V5.0) is around 85 %.

## Features:

- AFERS captures live video stream for online analysis and stores the video sequence for offline analysis.
- A unique feature of AFERS is quantifying with a score for each of the expressions based on the intensity or degree of expression exhibited by the person. The scores so exhibited have been validated by Human Psycho-visual judgement.
- The intensity of expression is represented graphically for one or more expression (in case of mixed expressions) for each of the frames.
- For easy user interpretation graphical representation of one or more expression is displayed after completion of analysis both in the form of bar graph and pie-chart.

## Application Areas:

- Patient care system
  - As an assistive aid tool for persons suffering from autism.
- Human Computer Interface (HCI)
  - Smart robotics.
  - Tourist Information Management System.

## System Requirements:

- RAM: Min. requirement is 4 GB
- Core 2 Duo, 2.79 GHZ processor or, equivalent
- OS: Microsoft Windows 7



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