



The human face provides a number of signals essential for interpersonal communication. It is one of our most direct means of communication and allows us to recognize someone's affective state and intentions. Annotating facial expressions objectively however can be a real challenge.

FaceReader is a revolutionary new tool that is capable of automatically analyzing facial expressions, providing the user with an objective assessment of a person's emotion.

## Why use FaceReader?

### Save time and resources

You will be able to quickly detect interesting episodes in a long series of events. FaceReader will save you valuable time and resources: instead of you spending time annotating facial expressions, the computer does the work.

### Increase accuracy, reliability, and objectivity

Using FaceReader for analysis of facial expressions increases accuracy and reliability in your observations. It also helps you to improve the objectivity of user experience evaluation.

### Integrated solution with The Observer

Importing the FaceReader data into The Observer® offers a unique solution for integration, visualization, and analysis of FaceReader data with other data, such as manually logged events, physiological data and eye tracking data. This compatibility enables you to analyze the full context: what user interface is the test participant looking at or which image is triggering an emotion? You can use the advanced video-editing functions of The Observer to create highlight clips in no time.



## What is FaceReader?

FaceReader is the first truly automated system for the recognition of a number of specific properties in facial images, including the following expressions:

- happy
- sad
- angry
- surprised
- scared
- disgusted
- 'neutral' state

Facial expressions are represented both as bar graphs and as a continuous signal. An additional gauge display summarizes the negativity or positivity of the emotion.



In addition to analyzing expressions, FaceReader can also classify faces on the following properties: gender, age, ethnicity, and facial hair (beard and/or moustache). FaceReader also includes a basic person recognition algorithm. Individual

subjects will be recognized after prior input of the original facial image.

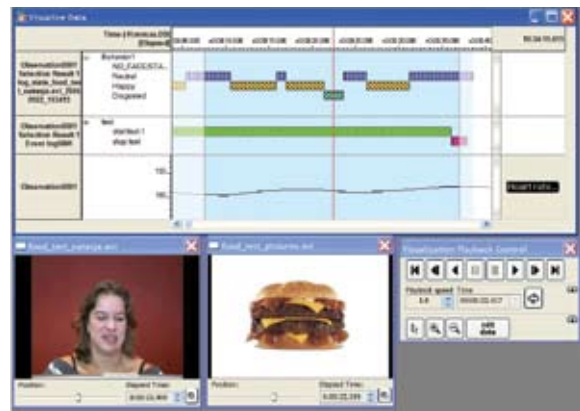
## Applications

This new tool can be used in a wide range of research areas:

- **Psychology:** How do people respond to particular stimuli, e.g. in fear research?
- **Education:** Observing students' facial expressions can support the development of educational tools.
- **Human-computer interaction:** Facial expressions can provide valuable information about user experience.
- **Usability testing:** Emotional expressions can indicate the ease of use and efficiency of user interfaces.
- **Market research:** How do people respond to a new commercial's design?
- **Consumer behavior:** How do participants in a sensory panel react to a presentation?

## Technical guidelines

FaceReader can be used for the analysis of video files and still images. It can also analyze in real time (live) with the use of a webcam. The best results are achieved with diffuse frontal lighting on the test participant; Noldus provides illumination for the optimization of your set-up. FaceReader can be used with test persons aged twelve and older. The orientation, movements, and rotation of the test person should be within certain limits. Currently the best performance is achieved with non-Asian test participants, the test database is still being expanded. Glasses might interfere with the analysis process.



## Using FaceReader with The Observer XT

Data acquired with FaceReader can be easily imported into The Observer XT, our software package for collection, analysis and presentation of observational data. The data can then be synchronized with event logs, keystrokes, mouse clicks, video, screen capture, etc. FaceReader data can be visualized and analyzed in The Observer XT, enabling easy integration with other observational and physiological data. Classifications can be exported to analytical and database programs such as Microsoft Access and Excel or in plain text format to any other preferred package.

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