IMOTIONS®

realeyes

Realeyes
Facial Expression
Analysis

Measure Emotional Expressions

Realeyes Facial Expression Analysis

Measuring emotions and attentiveness of an audience

Emotional and cognitive states are important for decision making. Naturally, that includes most brand and purchase decisions, making emotions a key driver of commercial success. Using computer vision and machine learning, Realeyes technology measures how people feel and their attentiveness as they view content.

Emotion and attentio data can be viewed and analyzed, helping understand expressed emotional responses and audience attention levels.

- ○ Single platform for integrating and implementing facial expression analysis into human behavior research

- ○ Categorize emotions as expressed in the faces of participants

- ○ Measure the attentiveness of your audience with the most sophisticated attention metric on the market, tracking more behavioral cues than any other solution
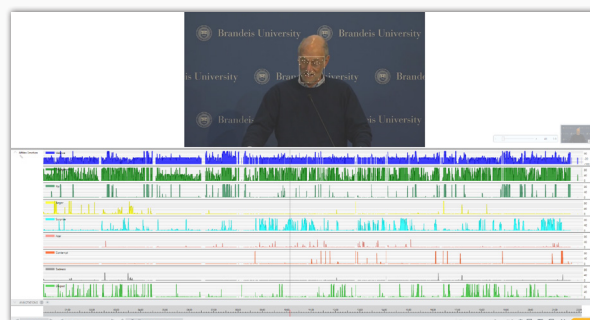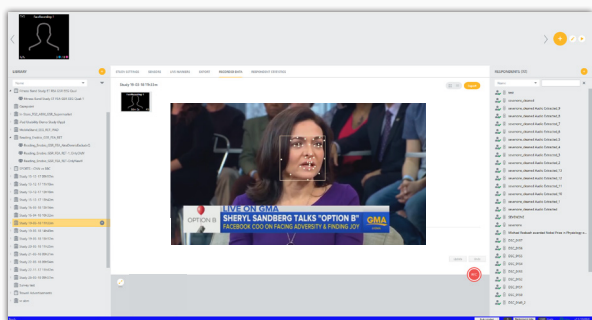
Attention Data

See how captivated your audience is by volume and quality.

Emotion Data

Know exactly how your audience is feeling - second-by-second.
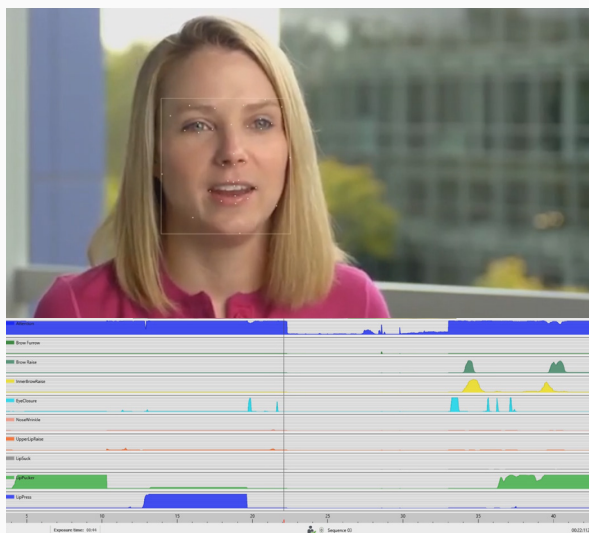
Data Collection

In the wild data collection, detecting head position and facial landmarks for attention and emotion recognition.

iMotions and Realeyes Features

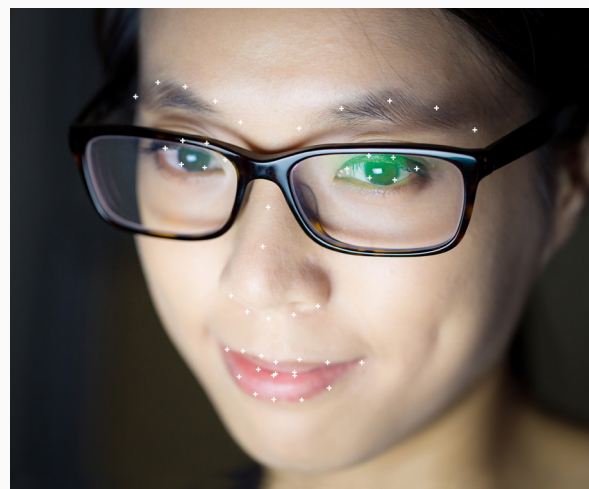## Measuring human response at the speed and scale of AI

Understand emotions

Analyzing facial expressions allows rapid, quantifiable insights from expressed facial emotions. Facial expression analysis has been carried out manually for decades - now this can be carried out with data in real time, helping you understand the emotions elicited by stimuli as fast as they are generated.

Post-import and analyze

Video recordings can be post-imported into iMotions for facial expressions to be analyzed without the need for live analysis. Record however you like, or use prior recordings, to understand expressed emotions.
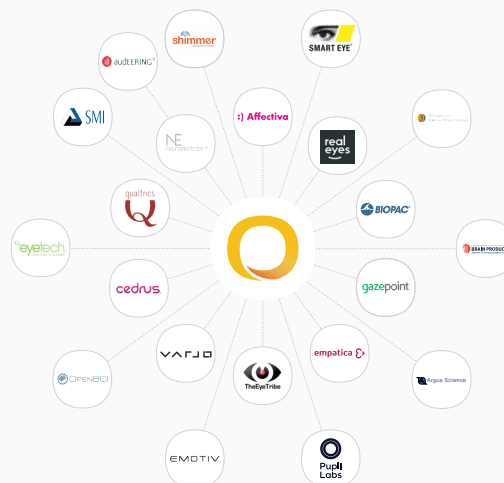
Seamlessly integrated with other biometric sensors

Integrate and synchronize 50+ different sensors from 20+ independent vendors, across 10+ modalities. Add even more sensors through the Lab Streaming Layer. Forward data in real time and import external sensor / software data and loop it back into the platform via the API.

Non-intrusive and natural

Facial expression analysis only requires a webcam for recording the face and can thus be carried out in a wide range of environments. No intrusive measurements are required for recording natural facial expression data.
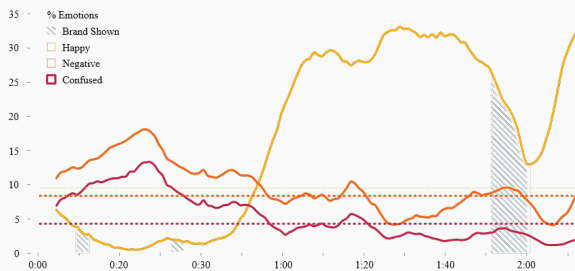
Rapid, unbiased results

With Realeyes, emotions are detected, aggregated, and reported online, second-by-second, for quick decision-making. By reporting unfiltered and unbiased responses, brands, agencies, media companies and publishers can act to improve customer experience and optimize their media buying decisions.

Vast range of data

Realeyes provides data at the second-by-second level examined within iMotions or exported for further analysis. This means you can be as granular as you need to be in your understanding of participants facial expressions and attentiveness.

How Realeyes Works

State of the art solution for facial expression analysis

iMotions employs the use of Realeyes' algorithms for facial expression analysis. With brands creating content at an exponential rate, there's a risk in not knowing how customers feel about the content they create. Marketers know that emotions are a major influence in consumer behavior. The Field, IPA and Gunn Report, "Selling Creativity Short," stated that awarded campaigns (emotional campaigns) were 10 times more efficient than non-awarded campaigns. Emotional content can create powerful memories, drive impact and motivate action – whether that's to buy, donate or share. Realeyes enables brands to know the if, why, how and when an emotional connection is made with consumers.

The science of the face

Commercial data sets of labelled expressions are available, but we prefer to train our algorithms on our own recordings as well, as they tend to be more representative of the images encountered in a real test scenario – what we call 'in the wild.'

By training our algorithms using our own data sets collected in the wild, we can maximize the chances that the algorithm will be able to read faces even in 'difficult' situations: bad quality images (or cameras); when the lighting is bad; parts of the face are very shadowed or hidden; when people are either too far or too close to the camera; when they're wearing glasses; or even have a lot of facial hair. Our database also enables us to account for a far greater variety of ages, genders and ethnicities.

By being trained on 'wild' data the algorithm will perform more reliably 'in the wild' than it would otherwise.

Advanced methods, advanced metrics

Basic emotions don't vary in their expression, though they may vary in intensity or context, for instance, so we can accurately train computer algorithms to recognize them using computer vision and machine learning techniques. The computer is fed a series of training instances – sets of images representing each emotion.

Each of these training instances is labelled by human annotators, identifying the expression. Using these data sets, the computer learns to associate the image with the emotion label, and is thus able to assign these labels to unseen data – images it hasn't encountered before, such as new recordings of people watching video content.

Emotional & Attention Analysis Metrics

Data for deeper understanding

The chart below shows the emotions data that Realeyes is able to collect from facial expressions captured via webcam or device. This includes our seven universal emotions, as well as our proprietary measures of Engagement, Valence, and Negativity. Realeyes is also able to measure and report on Attention Volume and Attention Quality.

Metric	Description
Attention	Head orientation towards the camera (stimulus) along with other cues for attention such as eye movement and other behavioral cues.
Confusion	Confusion is synonymous with a lowering of the brows. Confusion is not one of the basic emotions but is a similar expression to Anger and is displayed at much higher levels in response to advertising.
Contempt	Contempt is a newly added emotions metric that is the feeling of dislike and superiority over another person, group of people, and/or their actions, characterized by a tightened and raised lip corner on one side of the face.
Disgust	Disgust is synonymous with an expression of distaste.
Fear	Expression of fear.
Happy	Happiness is synonymous with a smile, indicating the cheeks raising and the corners of the mouth pulling up, respectively.
Empathy	Expression of sadness
Surprise	Surprise is synonymous with a 'shocked' expression – raised eyebrows, eyes wide, mouth open.
Scale	Size of the face in the recording.
Yaw	Head orientation.
Pitch	Head orientation.
Roll	Head orientation.

Facial Expression Analysis Values

The Science of Attention Measurement

Emotions & Facial Coding
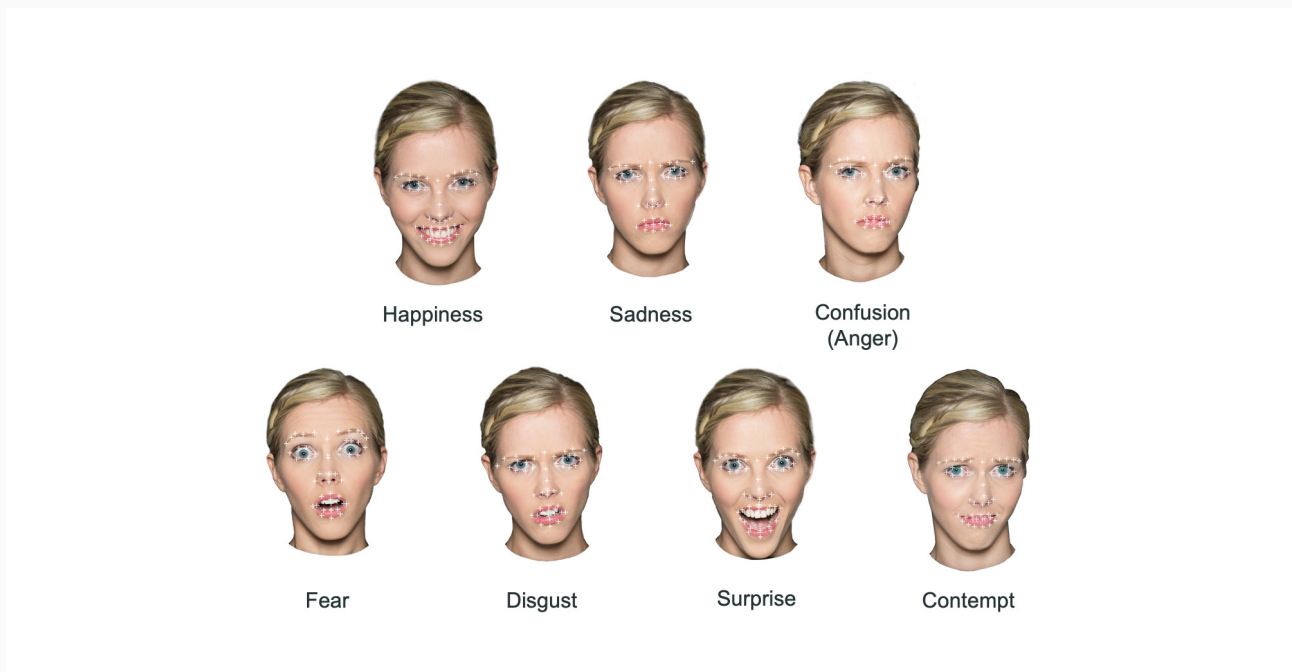
Understand more about your customers

Do research with the Realeyes integration

"It's fast, letting us know within a couple of hours how our audiences feel, the dashboard is easy to use and the data really helps us make quick decisions on our campaign planning."

Lisa McDowell
Head of Brand Strategy & Insight

Want to know more?

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