ReadMe: Freudian_Slips

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Project Type: Universal Windows App

Overview:

Freudian_Slips is an application developed in the Windows Universal Platform that helps to test and analyse emotional response accuracy to set of scientifically collected test images in subjects. The emotional response of the user to the images is compared against the ideal emotional response[1] using a self designed mathematical model. The quality and intensity of the emotional response are used as the parameters for analysis and indicated in the final response.

Methodology:

Humans irrespective of age, gender, race have a tendency of displaying similar set of emotions to similar external stimuli. Researchers at various psychology laboratories have compiled a Affective Picture Database which consists a set of images and the response to those images by the test subjects. Such data has been compiled by many institutes such as Swiss Centre for Affective Sciences , The Center for the Study of Emotion and Attention, University of Florida.
One such dataset is GAPED (Geneva Affective Picture Database). This is a set of 730 images along with the mean emotional response under the headings - valence and arousal displayed by the subjects along with the standard deviation.
In this project, we have used a representative subset of GAPED of 30 images. The images are flashed on the screen and using the device camera(webcam/front facing camera), the emotional reaction of the subject is calculated using Microsoft Cognitive Services™ Emotion API.
The application uses a self devised mathematical model to calculate deviation of emotional reaction of the subject to the stimuli from the average value. The value obtained is used to estimate the probability of emotional disorder or lack in cognitive growth.

Usage:

1. Install the package on a device running Windows 10 Anniversary update(preferably desktop).
2. Open the application in fullscreen mode (Prefered Resolution: 1280x720)
3. Read the instructions and start the test
4. Carefully observe the images that are shown. The camera will capture your response two seconds after a image is displayed.
5. After going through all the images, your results will be displayed on the screen that follows.

Scope:

The app can help fulfil the following purposes:

1. Special use in conducting preliminary Emotional Response Analysis on individuals incapable of responding to normal (written and oratory) psychological tests.
2. Helps in preliminary detection of emotional disorders in individuals which may further be diagnosed and confirmed by a trained Psychologist.
3. Helps people measure their emotional response accuracy without any psychological consultation and track it over time.

Precautions/Shortcomings:

1. The app doesn't claim to professionally diagnose psychological or emotional disorders in individuals and should not be used for the same.
2. For best results avoid portraying fake/forced emotions during the test as this may alter the authenticity of the results.
3. Do not cover your face with any object. Always give a clear and bright view of your face in the camera for best results.
4. The accuracy of the results depends on the accuracy of emotion data obtained using Emotion API. The mathematical model used is self devised and in no way scientifically established and requires further research into the field.

Notes:

1. The definition of an 'Ideal emotional response' here is based on the research conducted by Swiss Centre for Affective Sciences and the ideal responses to the used set of images formulated during the same.
2. Psych-analysis uses a standard vector scale of emotions to consisting of "Valence" on the X axis and "Arousal" on the Y axis to quantify emotions. For more information visit https://en.wikipedia.org/wiki/Emotion_classification#Vector_model
3. The app has all offline functionalities.

Bibliography:

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2. *The center for the study of emotion and attention* (2016) Available at: http://csea.phhp.ufl.edu/media.html (Accessed: 30 January 2017).
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