

Thanks to the new opportunities offered by technological development and Artificial Intelligence, today it is possible to understand more precisely how the subjective process of interpretation and aesthetic appreciation of an image occurs. Recent studies have shown that the aesthetic experience involves the areas of the brain which are assigned to different functions, which are identified using functional magnetic resonance imaging. From the occipito-temporal regions assigned to visual analysis and recognition of stimuli, to the fronto-parietal regions associated to the mirror neuron system for the analysis of kinematic aspects, to the meso-limbic brain regions such as insula, amygdala and orbitofrontal cortex for the analysis of the 'hedonic' aspects of aesthetic experience. However, such an in-depth study has physical and time limits, such as the inability to present the images for as long as the observer needs, to ensure accurate contemplation, as well as the particular conditions of observation of the images. For this reason, new technologies and wearable sensors are essential, capable of measuring cerebral and emotional responses. With electroencephalography (commonly known as EEG) we can detect the electrical activity produced by populations of neurons on the cerebral cortex. Eye-tracking, on the other hand, allows you to detect eye movements and fixation points, to identify which aspects of the work of art capture the observer's attention and activating his consciousness. The emotions expressed by the face can be detected by expression recognition, which track the degree of contraction of the facial muscles associated with the expression of specific emotions, such as happiness, fear, anger or disgust. Furthermore, by measuring the galvanic response of the skin (also called electrodermal activity), the emotional activation of a person can be identified. This technique measures changes in the electrical characteristics of the skin, such as conductance, caused by the changes in perspiration. Finally, with photoplethysmography (commonly known as PPG) it is possible to detect changes in blood flow, providing valuable information related to our cardiovascular system. The information acquired is then processed by means of Artificial Intelligence algorithm to reconstitute the neurophysiological process and generate a re-interpretation of the observed image, which is a tangible result of our neuro-aesthetic experience.