Recognition of Anxiety Levels from the Analysis of Skin's Galvanic Response

Chillitupa Quispihuanca, Alfred

Palacin La Torre, Alex

It has been postulated that anxiety and personality type A are the source of a large number of diseases, both psychic and organic. The conductance of the skin, known as the galvanic response of the skin, is now becoming one of the most common measurement tools for the autonomic nervous system, levels of stress and anxiety. Since the discovery of the skin’s electrical resistance properties, numerous studies have been carried out using Galvanic Skin Response (GSR), but later began to study the conductance of the skin, which is the reciprocal of resistance; distinguishing between spontaneous electrical activity and provoked activity. Therefore, because of the fact that various skin activities or responses can be measured, it has been proposed that all this activity is called electrodermal activity. The skin of a person in a state of relaxation does not conduct electricity well. This high resistance is generally measured as negative, approximately 40 mV, when compared body tissue. Sweat gland activity changes these properties by increasing the conductance of the skin and changing the balance of positive and negative ions in sweat. When a person becomes more stressed, there is an increase in the skin conductivity and these changes tend to occur in waves. In this context, a prototype was designed and implemented for the recognition of anxiety levels based on the analysis of the Galvanic Skin Response, using inexpensive materials such as an Arduino board and a Protoboard to assemble the electronic circuit, which will be commanded by a set of instructions through a programming language.

Awards Won: