

Analysis of heart beat rate through video imaging techniques

Abstract

Health is the condition of being free from disease or injury either in physically or mentally. To provide a general state of health, analysis of physiological parameters such as heart beat rate, blood pressure, respiratory rate, hemoglobin concentration and etc. are playing an important part. Among these physiological parameters, heart beat rate is the most essential indicator of people's health state because it is the heart rhythms to circulate the blood flow in the human body. Hence, in clinical diagnosis or for the patient in an intensive care unit, heart beat rate is the parameter that must be recorded and examined. The standard equipment like stethoscope, electrocardiogram, pulse oximetry are normally used for measuring heart beat rate but those equipment required to contact sensors to the human skin. In order to overcome the discomforts caused by the long period attachment of sensors and difficulties faced by patients who have skin damages, this research proposed a noncontact technique to measure heart beat rate through video imaging captured by an ordinary RGB camera. The acquired results from video imaging techniques are achieved more than 90% in accuracy by comparing with the results obtained through biomedical toolkit of LabVIEW. The developed techniques are attractive and suitable for regularly health care monitoring purposes due to its contactless, low cost, convenience, multiple people assessments and continuous benefits.