

Abstract Details

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Title: A Novel Regression based Technique to Estimate the Blood Pressure

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Abstract: In today's era due to sedentary and stressful lifestyle Health Monitoring has become one of the important areas to look upon. Wireless Body Area Network helps in improvement in the delivery and monitoring of health care. WBAN is a unique purpose sensor network that provides continuous health monitoring of a person through biosensors. One of the significant reasons that lead to increased number of deaths every year worldwide is cardiovascular illness. An abnormal high blood pressure or hypertension leads to cardiovascular illness. When the blood circulates in the body it applies a certain force on the blood vessels which is measured as Blood Pressure. It affects the cardiac output as well as blood vessels so it is an essential parameter that needs to be monitored. Commonly the device known as sphygmomanometer is used to measure blood pressure. But with the growth in IOT and wearable devices the demand of measuring Blood Pressure indirectly (without inflation, deflation of cuff) has increased. The Continuous monitoring of Blood Pressure method is an invasive one which is painful. To estimate the Blood Pressure indirectly and in a non invasive manner using other important signals such as ECG a method has been proposed which finds a correlation between the R peak that is the wave with maximum amplitude in an ECG Signal with the Arterial Blood Pressure. Regression analysis is performed on the dataset to estimate the blood pressure.

Keywords: Wireless Body Area Network, Blood Pressure, ECG (Electrocardiograph), Regression Analysis.