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Body and Fall Detection System with Heart Rate Monitoring

Falls can result in physical and psychological trauma, especially for the elderly. In order to improve the quality of life of these patients this work presents the development of a fall detection and body positioning with a heart rate monitoring system. This system consists of the sensing equipment, gateway and a real-time patient monitoring structure. The sensing device obtains information from accelerometers and gyroscope and sends them to the gateway via Zigbee technology, which makes the processing of the data and sends them to the cloud. The current patient body position and temperature sensing are provided through a web platform and Android application. The body, walking and falls position were respectively satisfactory in 100%, 90% and 60% of cases during tests at the laboratory. We conclude that our current proposal achieved the goal of patient fall detection with a corporal temperature monitoring using a low cost budget implementation.