

Design and development of a knowledge driven web based remote cardio patient data monitoring and diagnostic tool

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Knowledge driven technological developments, the growth and speed of application oriented products in the field of web based services, medical technology and information science, the use of sensor networks for remote patient monitoring is currently playing a major role in quality healthcare delivery to the masses. However, further research need to be done for more effective diagnosis and treatment of diseases remotely. An improved web based, knowledge driven, patient data monitoring and diagnosis system remotely, is developed to acquire, store and process the data using specially developed GUI (Graphical User Interface) on lab-view platform. The GUI displays, communicates and processes vital biomedical parameters such as Heart rate (HR), beat to beat ratio (R-R), QRS and QT intervals etc after acquiring ECG, pulse rate, body temperature etc. from the patient's body sensors. The system detects any emergency condition automatically, if the patient develops any abnormality in his heart rate or irregularity in rhythm heart line and establishes direct connectivity between specialists and patient. The provision to store the online data on remote PC in auto mode is given. The storage of data files on demand on local and remote PC and online data communication between the two is done through shared variables. A case study to evaluate the performance and to verify the experimental implementation is conducted on two patients with varying heart rate (HR) and varying rhythm and the results were found exactly to be in accordance with the expected outcome.

Biography

After obtaining Master degree in Physics (Electronics) and M.Tech (1977) in Electronics and communication Engineering, Hari Raj Singh joined Indian Institute of Technology, Roorkee India in 1977 as Sr. Research Fellow and completed his Ph.D. research work. In 1980, he joined Council of Scientific and Industrial Research India as Sr. Scientist and rose to the position of Sr. Principal Scientist, Head of Biomedical Division and Project Advisor at National Physical Laboratory, New Delhi India. He have about 50 research publications in National and International Journals of repute and conferences. Besides, he was associated with several International journals as Hon. Editorial Board Members and Peer reviewer. He visited several countries and universities for delivering invited lectures and chairing sessions in conferences. Presently he is working as Director, Radha Govind Group of Institutions Meerut, India. His areas of research are Cardio-vascular signal detection, monitoring, analysis and transmission, Cancer nodule detection, Speech synthesis, Bio-medical signal processing, Robotics and its social applications and design and development of aids and appliances for disabled.

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