

[0006] Figure 3 illustrates a method for measuring the blood pressure of the subject, in accordance with an implementation of the present subject matter.

SUMMARY

[0006a] In one aspect, there is provided a device for measuring blood pressure of a subject, the device comprising:

a processor; and

a blood pressure measurement (BPM) module coupled to the processor to,

obtain a plurality of photoplethysmogram (PPG) features associated with the subject;

ascertain one or more latent parameters associated with the subject based on the plurality of PPG features and a reference model, wherein the reference model indicates a correlation between the plurality of PPG features and the one or more latent parameters; and

determine blood pressure of the subject based on the one or more latent parameters and the plurality of PPG features.

[0006b] In one aspect, there is provided a method for measuring blood pressure of a subject, the method comprising:

obtaining a plurality of photoplethysmogram (PPG) features associated with the subject;

ascertaining one or more latent parameters associated with the subject based on the plurality of PPG features and a reference model, wherein the reference model indicates a correlation between the plurality of PPG features and the one or more latent parameters; and

determining blood pressure of the subject based on the one or more latent parameters and the plurality of PPG features.

[0006c] In one aspect, there is provided a modeling system for measuring blood pressure of a subject, the modeling system comprising:

a processor; and

an analysis module coupled to the processor to,

obtain a sample dataset comprising physiological data associated with each of a test subject from amongst a plurality of test subjects, wherein the physiological data comprises at least one ground truth value of blood pressure associated with the test subject and a PPG waveform associated with the test subject;

process, for each of the plurality of test subjects, the physiological data associated with the test subject to obtain a plurality of PPG features;

compute, for each of the plurality of test subjects, one or more latent parameters associated with the test subject based on the plurality of PPG features and the at least one ground truth value; and

determine, based on the one or more latent parameters and the PPG features associated with each of the plurality of test subjects, a reference model for measuring blood pressure of the subject in real time, wherein the reference model indicates a correlation between the one or more latent parameters and the PPG features associated with each of the plurality of test subjects.

[0006d] In one aspect, there is provided a method for measuring blood pressure of a subject, the method comprising:

receiving a sample dataset comprising physiological data associated with each of a test subject from amongst a plurality of test subjects, wherein the physiological data comprises at least one ground truth value of blood pressure associated with the test subject and a PPG waveform associated with the test subject;

processing, for each of the plurality of test subjects, the physiological data associated with the test subject to obtain a plurality of PPG features;

computing, for each of the plurality of test subjects, one or more latent parameters associated with the test subject based on the plurality of PPG features and the at least one ground truth value; and determining, based on the one or more latent parameters and the PPG features associated with each of the plurality of test subjects, a reference model for measuring blood pressure of the subject in real time, wherein the reference model indicates a correlation between the one or more latent parameters and the PPG features associated with each of the plurality of test subjects.

[0006e] In one aspect, there is provided a non-transitory computer readable medium having a set of computer readable instructions that, when executed, cause a device to:

obtain a plurality of photoplethysmogram (PPG) features associated with the subject;

ascertain one or more latent parameters associated with the subject based on the plurality of PPG features and a reference model, wherein the reference model indicates a correlation between the plurality of PPG features and the one or more latent parameters; and

determine blood pressure of the subject based on the one or more latent parameters and the plurality of PPG features.

DETAILED DESCRIPTION

[0007] The present subject matter relates to measuring blood pressure of a subject, for example, an individual, based on a photoplethysmogram (PPG) associated with the subject.

[0008] Typically, an individual seeking to get his/her blood pressure measured may visit a medical clinic or a hospital. In such scenario, a physician or a trained medical technician measures the blood pressure of the individual with the help of medical instruments, such as a sphygmomanometer and a stethoscope. As may be gathered, in the aforementioned scenario, measurement of the blood pressure may only be performed by individuals having specific skill set suitable for efficiently using the medical instruments for measuring the blood pressure. Thus, periodical measurement of blood pressure may require regular visits to the medical clinic or hospital and may prove to be a cost intensive method for the individual.

[0009] In a conventional approach, an over the counter device implementing photoplethysmography may be used for measuring blood pressure. The photoplethysmography may be understood as a non-invasive optical technique for measuring physiological parameters, such as respiration rate, heart rate, and blood pressure of an individual. In such conventional approach, a PPG waveform associated with the individual may be obtained by processing a video of the individual or a video of a part of the body of the individual. Based on the PPG waveform and a predetermined statistical model, the blood pressure of the individual may then be determined. However, determination of the blood pressure based on the aforementioned approach may, at times, result in vague blood pressure measurement. For example, in a case where a statistical model based on a large dataset of blood pressure records is used for determining the blood pressure, accurate measurement of