Abstract

Heart rate (HR) is an informative index to assess one's physical condition from the viewpoint of preventive healthcare; it is beneficial if information of HR can easily be obtained without a particular clinical instrument. In this research, voice data was used to estimate HR, because it can easily be recorded using a common device such as smartphone. To evaluate the feasibility of HR estimation using recorded voice, experiments were conducted with two subjects. In the experiment, 60 sets of HRs and voice data were measured per subject. A correlation between HR and the vocal frequency was observed, and the feasibility of HR estimation using voice data was confirmed. The relationship between HR and voice data was modeled using a polynomial function of vocal frequency. Using the proposed model, HR could be estimated with high correlation coefficients and small estimation errors.

References

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Modeling the Relationship between Heart Rate and Features of Vocal Frequency


Index Terms

Computer Science
Signal Processing

Keywords
Heart rate preventive healthcare vocal frequency modeling