Identifying Abnormalities in Heart Sound data using Machine Learning

Increasing heart diseases is a growing cause of concern in the population worldwide [1]. To this end, early diagnosis and preemptive measures can reduce the risk of fatal heart attacks in individuals. The growth of mobile and IOT has provided the opportunity to develop apps for health monitoring by the individuals.

This project envisages to map the sound profile of the heart along with other parameters. To develop acoustic model of the heart and calibrate it to individual heart profile. Further these profiles will be analyzed for possible abnormalities in the heart function. It is envisaged to develop a visual acoustic model of the heart. To this end, an available dataset containing heart sounds will be considered (for example, [3]). After understanding the various input and output parameters, the sound signals will be preprocessed for further analysis. In the next step, suitable machine learning (ML) algorithm will be identified for personalized learning and fault detection in heart sound. After, training with the preprocessed data, validation and testing will be performed to corroborate the results.

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References

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[3] https://www.kaggle.com/datasets/kinguistics/heartbeat-sounds