Infant Vitality Watch: Revolutionizing Newborn Healthcare

EXPERIENTIAL LEARNING CENTRE
TIET, PATIALA

Introduction

Implementing a robust infant monitoring system in hospitals is crucial due to infants' communication limitations. This system ensures continuous monitoring, early issue detection, and prompt interventions, improving infant safety and healthcare quality with real-time data.

Our Approach

We have created a real-time health monitoring device tailored for infants, designed to continuously track vital signs in healthcare settings. The device features a dynamic dashboard and alarm system, ensuring medical professionals are promptly notified of any changes in the baby's condition.

Datasets used

- The Non-Invasive Fetal ECG Arrhythmia Database(Physionet)
- MIT-BIH Arrhythmia Database(Physionet)

Classification Results

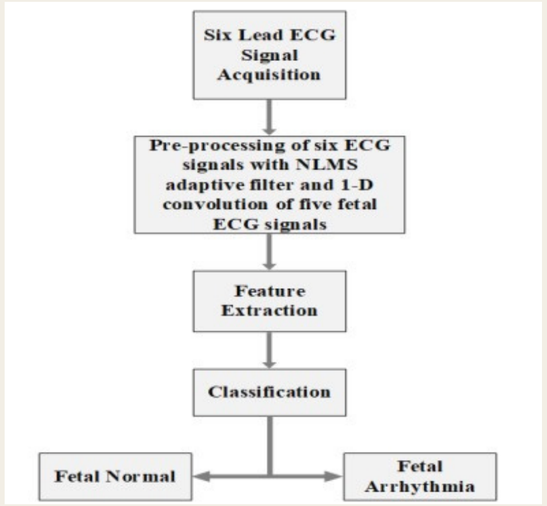
MIT-BIH DATABASE

MODEL	ACCURACY
Random Forest	0.98
Xgboost	0.98
LGBM	0.97
LSTM	0.97
CNN	0.98

NON INVASIVE FETAL ECG DATABASE

MODEL	ACCURACY
CNN	0.92
LSTM	0.88
ANN	0.95

Methodology

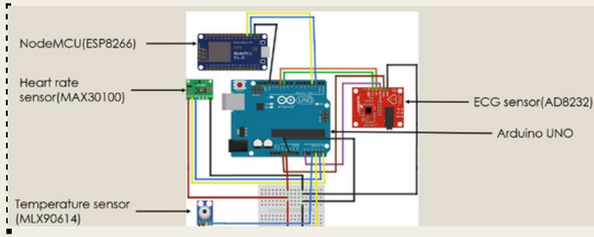


Clinical Data collected from hospital

Manpreet Kaur

S.No.	HR	RR	CRT	SPO2
1	132	52	3	100
2	122	61	3	98
3	129	57	3	100
4	127	55	3	100
5	118	50	2	98
6	128	56	3	97
7	134	58	3	98
8	126	56	3	94
9	142	58	3	97
10	135	54	3	95
11	140	58	3	92
12	128	58	2	98
13	122	52	2	92
14	139	49	2	95
15	127	60	2	90
16	132	55	2	96
17	140	51	2	93
18	134	56	3	96

Diagrams



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