

AI-POWERED LOW COST ECG DEVICE

This device aims to enhance the accessibility and quality of cardiac care, particularly in underserved regions, by providing a cost-effective and reliable tool for early detection and monitoring of cardiovascular diseases.

AUTHORS

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AFFILIATIONS

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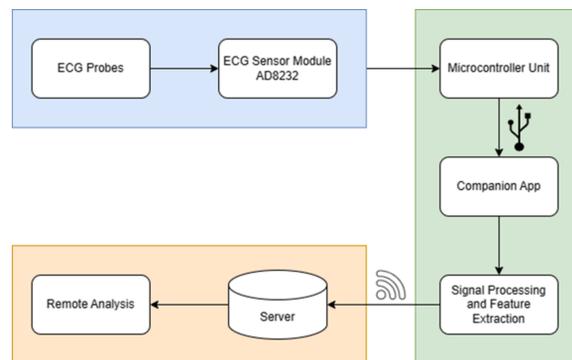
INTRODUCTION

Cardiovascular diseases (CVDs) are the leading cause of mortality in India, accounting for a significant proportion of premature deaths. Early detection and continuous monitoring of heart conditions are crucial for effective management and treatment of CVDs. Electrocardiograms (ECGs) are a fundamental diagnostic tool for detecting cardiac abnormalities. However, the high cost and limited availability of conventional ECG machines pose significant barriers to healthcare accessibility, particularly in rural and underserved regions.

OBJECTIVE

The primary objective of this project is to develop an affordable, AI-powered ECG device that can enhance the accessibility and quality of cardiac care in India. By leveraging advanced machine learning algorithms and cost-effective hardware, this device aims to provide accurate and real-time analysis of ECG signals, facilitating early diagnosis and timely intervention for individuals at risk of cardiovascular diseases.

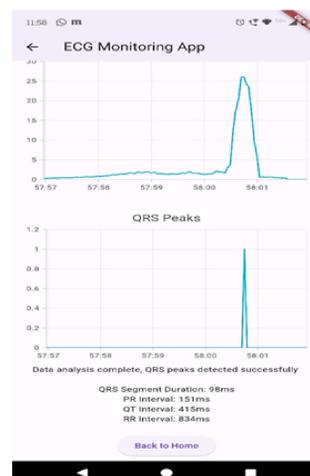
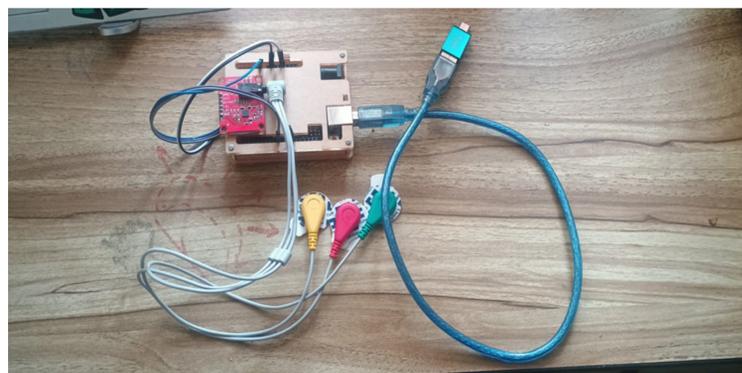
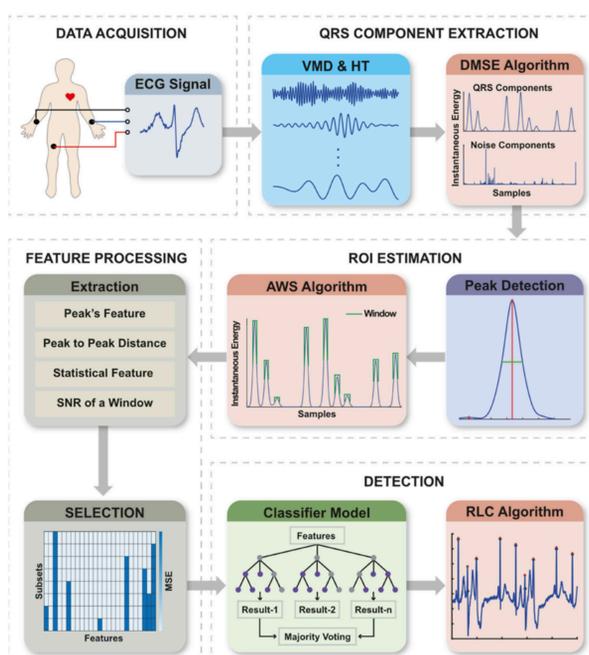
METHODOLOGY



RESULTS

- Successfully developed and tested the AI-powered, low-cost ECG device.
- The device accurately captured and analyzed different segments of the ECG wave complex.
- The extracted ECG features are used by a machine learning model to classify heart rhythms into normal or abnormal categories.

ANALYSIS



CONCLUSION

In conclusion, our project successfully achieved the primary objectives of transferring electrocardiogram (ECG) data from a microcontroller unit (MCU) to a smartphone and implementing the algorithm for QRS peak detection. Through meticulous design and integration, we established a robust communication link between the MCU and smartphone, facilitating the real-time transmission of ECG data for monitoring and analysis.