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Automated Diagnosis of Cardiac Diseases Using ECG Image Analysis

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Abstract: *This project presents an auto-ECG image analysis-based automated system for the prediction of four key cardiac states of abnormal heartbeat, history of myocardial infarction (MI), myocardial infarction, and normal heartbeat by means of advanced deep learning. The system is quite beneficial in providing accurate results as per ECG data acquired. It also generates follow-ups relevant to the detected condition so that emergency cases can reach for immediate medical intervention and diagnosis. The system is particularly valuable in settings where cardiologists are unavailable, ensuring timely detection and response to critical cardiac issues. A user-friendly web application built using Streamlit allows users to easily upload ECG images, which are then pre-processed and analyzed to deliver fast and reliable diagnoses. This is with the integration of deep learning into accessible technology in the aim to enhance early detection, optimize patient outcomes, and streamline cardiovascular healthcare especially in emergency situations and remote areas.*

Keywords: ECG image Analysis, Cardiovascular Disease Classification, Myocardial Infarction

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