1. Project Title

Heart Attack Prediction Using ECG Images

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2. Objective

The objective of this project is to develop a deep learning model capable of analyzing ECG (Electrocardiogram) images to predict the risk of a heart attack. This tool aims to assist healthcare professionals in making faster and more accurate diagnoses, potentially saving lives through early detection.

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3. Background

Heart attacks are one of the leading causes of death globally. Electrocardiograms (ECG) are widely used in medical practice to detect abnormalities in heart function. However, interpreting ECG readings can be time-consuming and prone to human error. With advancements in artificial intelligence, image-based diagnostics have become a promising solution to these challenges.

This project proposes a machine learning approach to analyze ECG images and provide risk predictions for heart attacks, enabling more efficient and accurate diagnostics.

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4. Scope of Work

1. **Data Collection and Preprocessing:**
    - Acquire a dataset of labeled ECG images.
    - Preprocess the images (resizing, normalization, and augmentation).
2. **Model Development:**
    - Design and implement a convolutional neural network (CNN) for image analysis.
    - Train and validate the model using the dataset.

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5. Expected Outcomes

- A trained and tested AI model capable of predicting heart attack risk from ECG images.
- A web-based or desktop application for healthcare professionals to easily use the tool.
- Improved accuracy and efficiency in diagnosing heart attack risks compared to traditional methods.