Classification of Arrhythmia by Using Deep Learning with 2-D ECG Spectral Image Representation

PROBLEM STATEMENT

Mr. Narayana Rao is a 35year old man. He wants to verify weather he has arrythmia or not. He has his ECG scan for verification but has no time to consult a doctor.

- He wants to get better knowledge about the disease.
- He cared about his heart about which he think its weak.
- He decided to find the weather he is affected or not.
- Narayana Rao needs an immediate remedy from the disease & he wants to know which specialist to get consulted if he had Arrhythmia.

Who does the problem affect?	Person who is suffering from arrhythmia (or) people who doesn't have time to consult a doctor.
What are the boundaries of the problem?	Person who has a problem with their heart and does not have time to consult a doctor (or) for someone who is in an emergency
What is the issue?	If Arrhythmia has been left untreated for a long term it could be fatal (or) in some cases it even caused deaths in short term itself.

When does the issue occur?	It is predicted that Current heart attack or scarring from a previous heart attack, Changes to the heart's structure, such as from cardiomyopathy, High blood pressure, etc causes Arrhythmia.
Where does the issue occur?	It affects the heart of a person affected with arrythmia.
Why is it important that we fix the problem?	According to the World Health Organization (WHO), cardiovascular diseases (CVDs) are the number one cause of death today. Over 17.7 million people died from CVDs in the year 2017 all over the world which is about 31% of all deaths, and over 75% of these deaths occur in low and middle-income countries. Arrhythmia is a representative type of CVD that refers to any irregular change from the normal heart rhythms.
What is the solution to solve this issue?	Therapies to treat heart arrhythmias include vagal maneuvers and cardioversion to stop the irregular heartbeat, etc

What methodology used to solve the issue?	• The person can scan the ECG scan image and then the image will be sent the trained model. The model analyses the image and detect whether the person is having Arrhythmia or not.