

## PROPOSED SOLUTION

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	Arrhythmia can take many different forms, such as tachycardia, ventricular fibrillation, premature contraction, and atrial fibrillation. Continuous arrhythmia beats can lead to deadly situations, even though a single arrhythmia heartbeat may not have a serious influence on life. In this study, we develop a convolutional neural network (CNN)-based technique for electrocardiogram (ECG) arrhythmia classification. The objective is to divide ECG into seven categories—one for normal ECG and the other six for various arrhythmias—using deep two-dimensional CNN on grayscale ECG images.
1.	Idea / Solution description	We propose a model to identify and test patients for various cardiac vascular arrhythmias. This investigation pushes us to identify various types of arrhythmia using Deep Learning algorithm. Convolutional Neural Network (CNN), a DL method effective in classifying signals, is the approach we utilise in this case. CNN is used to learn features automatically from time-domain electrocardiogram signals. We propose a web application in which the classification image is

		chosen by the user. The image is fed into the trained model, and the mentioned class is shown on the webpage.
1.	Novelty / Uniqueness	<ul style="list-style-type: none"> <li>● The proposed model predicts image arrhythmias with a high accuracy.</li> <li>● Early detection of arrhythmias enables a better understanding of the cause of the disease, initiation of therapeutic interventions and development of appropriate therapies.</li> <li>● CNN takes less detection time.</li> </ul>
1.	Social Impact / Customer Satisfaction	The feature that has been carefully modified takes the place of manually derived features, and this analysis will assist cardiologists in successfully screening patients for cardiac sickness. The ECG Dataset was used to train and test the CNN, and from the signal, seven different forms of arrhythmia were identified.
1.	Business Model (Revenue Model)	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. Hence these middle -income countries can use web application to predict arrhythmia.
1.	Scalability of the Solution	It would be interesting to explore the use of optimization techniques to find a feasible design and solution. Optimization techniques to optimize the model parameters

		and we believe that with the implementation of the optimization, it will be able to further elevate the performance of the proposed solution to the next level.
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