NARASARAOPETA ENGINEERING COLLEGE (AUTONOMOUS)

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

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Batch Number	AG4
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Guide	Dr.M.SIREESHA M.TECH.,PHD.
Title	Detecting and Classifying Myocardial Infarction in Echocardiogram Frames With an Enhanced CNN Algorithm and ECV-3D Network.
Domain/Technology	DEEP LEARNING
Base Paper Link	https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=10494316
Dataset Link	https://archive.ics.uci.edu/dataset/45/heart+disease
Software Requirements	Browser: Any latest browser like Chrome Operating System: Windows 7 Server or later Python (COLAB)
Hardware Requirements	System Type: Intel Core i5 or above RAM: 8 GB Number of cores:5 Number of Threads: 4
Abstract	Myocardial Infarction (MI), a leading cause of cardiovascular mortality, requires prompt and accurate diagnosis for effective intervention. This study proposes a novel approach for detecting and classifying MI using echocardiogram frames enhanced by a hybrid deep learning architecture. The model integrates an optimized Convolutional Neural Network (CNN) with an Extended Channel and Volume-aware 3D (ECV-3D) network to extract both spatial and temporal features of cardiac motion. The enhanced CNN module improves region-level precision, while the ECV-3D component leverages volumetric dynamics for robust classification of MI subtypes. Experimental evaluation on annotated echocardiographic datasets demonstrates superior performance in terms of accuracy, sensitivity, and specificity compared to existing models. These findings underscore the model's potential to support clinicians with reliable, real-time MI diagnosis using non-invasive imaging.

Signature of the student(s) **Signature of the Guide** **Signature of the project coordinator**