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(71)**Name of Applicant :**
1)SWAMI VIVEKANANDA UNIVERSITY
Address of Applicant :Telinipara, Barasat - Barrackpore Rd, Bara Kanthalia, West Bengal – 700121 Barasat ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Sangita Bose
Address of Applicant :SWAMI VIVEKANANDA UNIVERSITY, Telinipara, Barasat - Barrackpore Rd, Bara Kanthalia, West Bengal – 700121 Barasat ---------- ----------
2)Arpita Samanta
Address of Applicant :SWAMI VIVEKANANDA UNIVERSITY, Telinipara, Barasat - Barrackpore Rd, Bara Kanthalia, West Bengal – 700121 Barasat ---------- ----------
3)Sourav Saha
Address of Applicant :SWAMI VIVEKANANDA UNIVERSITY, Telinipara, Barasat - Barrackpore Rd, Bara Kanthalia, West Bengal – 700121 Barasat ---------- ----------
4)Diganta Bhattacharyya
Address of Applicant :SWAMI VIVEKANANDA UNIVERSITY, Telinipara, Barasat - Barrackpore Rd, Bara Kanthalia, West Bengal – 700121 Barasat ---------- ----------
5)Jayanta Chowdhury
Address of Applicant :SWAMI VIVEKANANDA UNIVERSITY, Telinipara, Barasat - Barrackpore Rd, Bara Kanthalia, West Bengal – 700121 Barasat ---------- ----------

(57) Abstract :
The invention relates to a system and method for detecting heart arrhythmias using electrocardiogram (ECG) signals analyzed through a Convolutional Neural Network (CNN). The system comprises a signal acquisition module to record ECG signals from a patient, a preprocessing unit to filter and normalize the signals, and a CNN model that classifies the ECG signals into normal heart rhythm or various arrhythmia types. The output interface displays the classification results and provides recommendations for further medical consultation if an arrhythmia is detected. The method involves acquiring, preprocessing, and classifying the ECG signals using the CNN model, followed by displaying the results to aid healthcare providers in timely and accurate diagnosis of arrhythmias. This invention enhances the accuracy and speed of arrhythmia detection, providing a reliable tool for early diagnosis and better patient outcomes.

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