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Electrocardiogram Storage and Digitizer

Abstract:

Since its invention in 1839, Electrocardiography (ECG) has become an integral part of clinical practice across the globe. Till today, multiple research work is being carried out where ECG holds immense significance. However, with the advent of newer technologies, the need has arisen for digital data from ECGs for research purposes (at times even more than the graphs themselves).

Today's world lacks 2 important aspects from this need :

- An international repository for ECGs. Though multiple libraries for ECGs exist, none are universal, very few have research value because of analogue data (picture of the graph).
- A user-friendly software to convert the analogue entries into digital data for use in today's technologies.
- The Electrocardiogram Storage and Digitizer (E-STAD) gives users across the world the options to
- Upload ECGs onto the repository in either analogue or digital formats. The repository shall contain ECGs from Standard 12-Lead ECG machines along with device-based ECGs (like portable handheld devices and digital stethoscopes)
- Interconversions between analogue and digital data of ECGs
- Stabilisation of existing ECG digital data (ensuring 0: baseline alignment)
- Modification of ECG amplitudes to suit the user

E-STAD, available as a website, an app, and as a plug-in ensures seamless integration into existing research platforms. With user-friendly interface, researchers alike can effortlessly navigate through the repository, accessing a vast array of ECG data from diverse sources. Moreover, E-STAD employs state-of-the-art algorithms ensuring accuracy and fidelity of the converted data, making it invaluable for research.

Additionally, E-STAD prioritises data security and privacy, implementing robust encryption protocols to safeguard sensitive patient information.

In an era where data-driven insights are revolutionising healthcare, E-STAD stands as a beacon of accessibility and universality, empowering researchers to unlock new discoveries and improve patient outcomes.

Biography

Abhijit Ray is a distinguished Interventional Cardiologist and Heart Failure Specialist. Having finished his training in Cardiology at King's College London and Fellowship in Heart Failure Management from Harvard Medical School, he is currently working in New Delhi, India. An earnest researcher, especially in areas combining healthcare and Artificial Intelligence. Many of Dr. Ray's articles have been published in international journals. He also has a patent awarded to his name from the USPTO and two patents pending with the Government of India. His most recent invention, the Heart Failure Predictor, has found a widespread audience across the globe.