(22)Inter-Patient ECG Classification

1. **Preprocessing: Filtering & Segmentation**

* 200ms and 600ms median filter
* followed by applying a uniform moving average with window size 7 for removing high-frequency powerline and muscle noises
* resampled (360Hz for mitdb, 128Hz for svdb)

1. **Feature Extraction**

* Deep learning Model mentioned in next Point

1. **Classification & Classifier**

Using

deep learning architectures include deep belief networks (DBN)[30], stacked auto-encoder (SAE) [31] and convolutional neural networks (CNN)[

it can be considered as a more generic approach for dealing with scenarios in which varieties of ECG signals are collected from different patients using different types of sensor devices

1. **Accuracy**

convolutional neural network that achieved maximum accuracy of 93.18%.

1. **Two Leads or One Lead ? In case of two leads .. how classification of two leads is merged to have final decision ?**

have developed algorithms based on Restricted Boltzmann Machine (RBM) for two-lead heartbeat classification

1. **Classes**

**five classes of interest: normal (N), ventricular (VEB), supraventricular (SVEB), fusion of normal and ventricular (F) and unknown beats (Q).**

1. **- Data Sets**

**From Association for the Advancement of Medical Instrumentation : (AAMI) dataset that’s 500 times larger than others of its kinds.**