Paper Title

**:[Machine Learning Methods in Electrocardiography Classification]**

1. **Preprocessing: Filtering & Segmentation**

[*Band pass filter*]

* There are several common approaches here: use abnormalities detection algorithms or apply class weights or perform data balancing.
* While applying class weight helped to prevent overfitting

on early training stages, the model still failed to learn class specific features.

The second approach was to apply data balancing. There

are many techniques available for performing data balancing

including:

Under-sampling (deleting instances of over-represented

classes)

Over-sampling (repeating training with under-represented

classes)

1. **Feature Extraction**
   1. QRS detection.
   2. Heartbeat extraction.
   3. Features extraction
2. **Classification & Classifier**

ECG classification was based on decision tree

* the random forest algorithm.

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

One lead

**Classes**

Class

Identifier Precision Recall f1-score

0 0.77 0.67 0.72

1 0.73 0.75 0.74

2 0.64 0.68 0.66

3 0.68 0.61 0.65

Avg/total 0.70 0.70 0.70