

A System for Automatic Verification of Arrhythmia Detection Algorithms

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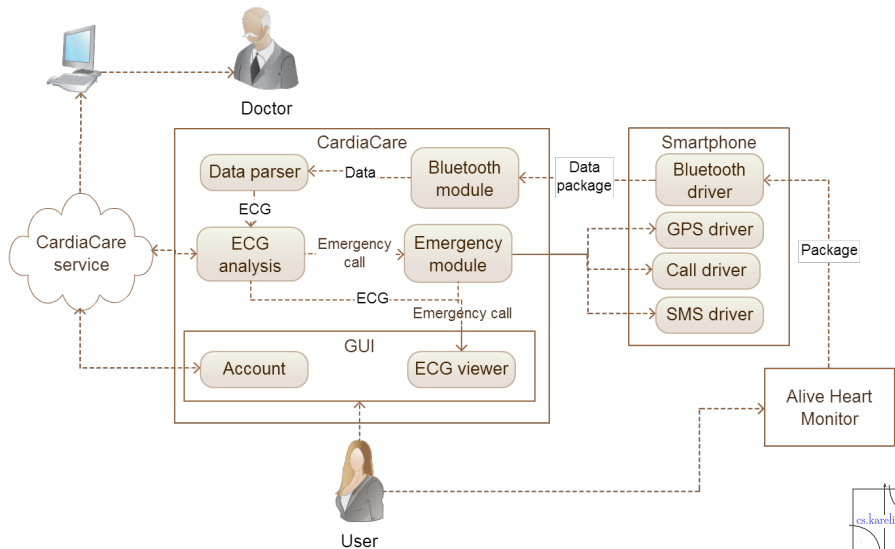
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CardiaCare Architecture



Algorithm Quality Indicators

- True Positive (TP) — counter of the correctly identifies an arrhythmia case.
- False Negative (FN) — counter of the algorithm fails to detect the arrhythmia.
- False Positive (FP) — counter of the normal ECG-episodes are detected as arrhythmias.

Sensitivity:

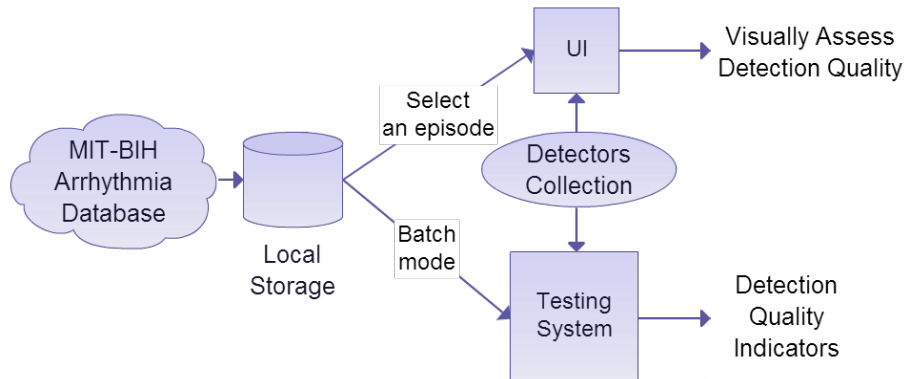
$$S = \frac{TP}{TP + FN}$$

Positive Prediction:

$$P = \frac{TP}{TP + FP}$$



Verification System



Arrhythmia Types

Category	Beat Annotations	Description
1	N, P, f, p, Q, , +, s, t, , L, R	normal beats atrial, nodal and supraventricular premature beats
2	A, a, J, S	ventricular premature beats
3	V, F	escape beats
4	e, j, n, E	ventricular flutter- fibrillation beats
5	[, !,]	



Verification System

