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## Atrial fibrillation (AF) detection from photoplethymography (PPG) based on pattern analysis

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A trial fibrillation (AF) is an irregular condition related to heartbeat leading to several complications including strokes. AF requires extensive and regular diagnosis to confirm its severity, however traditional methods using Electrocardiogram (ECG) is expensive, invasive and time consuming. An innovative approach is the use of PPG implemented on smart phone technologies which has a wide coverage and accessibility for users. However, PPG signals obtained are not clouded by subjectivity yet they do not necessarily report a single definitive depiction of reality relating to autonomic regulations and requires extensive derivation of features to classify individuals correctly. Even though the signals obtained in ECG and PPG are different, their peaks are similar and can be used to derive features that relate to biological interpretation and decisions to classify individuals into a category of heart arrhythmia. Currently, statistical techniques and literature available to classify individuals are few based on the features obtained from the peaks. In many instances, time domain features do not provide direct interpretation of biological features related to heart arrhythmia and therefore more features required. Required methodology for classifying individuals is urgently needed for different arrhythmia and validation to decrease its prevalence. In our approach, the performance of the classifier based on learning and test set can be implemented using the derived features from peaks. The performance and biases of the classification can be further obtained in comparison to gold standard (ECG). Presently, both Poincare and Tachograms provide useful graphical depictions of Heart Rate Variability measurements which can be a platform to improve classification of individuals decreasing the estimated burden of heart related diseases globally.

## Biography

Dennis Boateng has completed his Masters in Clinical Trials from the University of Ghana and hopeful to Graduate in February 2018 in the Master of Biostatistics from the University of Hasselt Belgium. He has worked at the Kintampo Health Research Center as a Data Manager and had practical experience in implementing trials on diagnostic instruments for screening as well as internship from Fibricheck in Belgium that implements PPG technology. He has a few publications in the Application of a Biometric Identification Technique for Linking Community and Hospital Data in Rural Ghana and other local publications from the Kintampo Health Research Center.

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