Project Proposal
(DUE Nov 1st 2018)

Project Name: ECG/PPG Analysis and abnormality detection using Machine Learning

PROJECT DESCRIPTION (< 200 words)

In the US, every 1 out of 4 deaths are due to heart diseases. This can be curbed to an extent with early diagnosis/detection. I plan to train a model with ECG and PPG(photoplethysmography) data separately and test the model on a sample data.

For the PPG analysis, I plan to use a custom module by Paul Van Gent, Faculty of Civil Engineering and Geosciences, TUDelft. And for the ECG analysis I will be using biospy / hrv.

Planning to make it real-time analysis in future.

SOLUTION (Deliverables). Write a bullet point list of what you expect your software will achieve.

- Trained ML Model
- Visual Dashboard giving insights about the heart rhythm.

DATASETS (if any)
Hoping to use custom dataset from Funxion, NCSU, Kaggle

Plawiak, Pawel (2017), "ECG signals (1000 fragments)", Mendeley Data, v3
http://dx.doi.org/10.17632/7dybx7wyfn.3

Expected Tools, Libraries to be used
https://github.com/paulvangentcom/heartrate_analysis_python/blob/master/docs/source/quickstart.rst
https://pypi.org/project/hrv/
https://pypi.org/project/biosppy/

These have dependencies on numpy, scikit and keras.