Homework assignment #3 – ECG

Today we collected ECG data. This data represents the electrical and muscular activity of the heart. In this assignment you will analyze real-life ECG data. Download either of the ECG files provided in the course’s website (one file was collected prior to class, the other is the data collected during the class). The collections are sampled at 100 Hz.

Instructions

* Use any programming language you wish. Load the data. The data files are simple text files, with single value per line.
* Show the typical ECG. Hint – show only a part of the data, typically 10-20 heart beats are sufficient. Indicate the time scale.
* Identify R peak in the data.
* Calculate R-R peak intervals for all Rs provided in the dataset. Calculate the mean heart rate (BPM) and its standard deviation.
* Present the R-R peak intervals in a histogram.
* Submit one ECG graph, BPM (mean and std values), your code. Answer the following question: Is the heart rate's std meaningful or should we always focus only on the BPM measure?

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