PROPOSAL OF THESIS TOPIC FOR MGR INŻ. (MSE) PROGRAMME IN TELECOMMUNICATIONS AND COMPUTER SCIENCE

Topic: An algorithm for real-time QRS complex detection in ECGs

Topic in Polish: Algorytm detekcji zespołów QRS w trakcie rejestracji EKG

Supervisor: Paweł Strumiłło

Auxiliary supervisor: Krzysztof Kudryński

Goals and scope of the work:

The QRS complex in ECG recordings indicates time instances at which electrical activation of the heart ventricles starts. A data series obtained from time periods between successive QRS complexes is an important signal used in many computed analysis techniques of ECGs (e.g. heart rhythm variability). The project should include an up-to-date review of algorithms for detection of QRS complexes. The aim of the thesis is to implement a QRS detection algorithm (in C++, Java, Python) that would be suitable for real-time operation. The algorithm should be verified in terms of its time precision and robustness. A database of large number of ECG recordings will be made available for the project.

Prerequisites (e.g. experience in writing programs in a computer language or knowledge of a foreign language):

Basic knowledge on digital signal processing methods, programming skills

Literature:


Łódź, 2010-05-19

Supervisor’s signature

THESIS TOPIC SELECTION ACKNOWLEDGMENT

Student’s name: ___________________________ Student’s ID __________________

Faculty: ___________________________

Main subject/major/module: ___________________________

Date and student’s signature

Supervisor’s signature