Biomedical Signal Analysis and Modeling

【Homework#3】

Due date: May 18, 2021

(Please refer to the textbook Biomedical Signal Analysis: A Case-Study Approach by Rangaraj M. Rangayyan.)

The ECG signal in the file ecgpvc.dat contains a large number of PVCs, including episodes of bigeminy. (See the file ecgpvc.m.) Apply the Pan-Tompkins procedure to detect and segment each beat. Label each beat as normal or PVC by visual inspection. Record the number of beats missed, if any, by your detection procedure. Compute the *RR* interval and the form factor *FF* (see 5.6.4) for each beat. Use a duration of 80 samples (400 *ms*) spanning the *QRS* - *T* portion of each beat to compute *FF*. The *P* wave need not be considered in the present exercise. Compute the mean and standard deviation of the *FF* and *RR* values for the normal beats and the PVCs. Evaluate the variation of the two parameters between the two categories of beats.