

Software Documentation

Software: NBR mechanisms

Author: Alejandro Suarez

Requisites:

- Install MATLAB (R2014b-R2021a), MathWorks.
- Add the folder "NBR mechanisms" to the MATLAB path, including internal subfolders.

1 - Inside the "ECI" folder:

- 1.1 Run the script "Main_ECI.m", to simulate show the dependance of the ECI-NBR mechanism with changes in its specific parameter. (Figure 1A)
- 1.2 Function scripts "eci_neuronal.m" and "eci_hrf_f.m" are called by the main script to compute the neuronal and the hemodynamic response respectively.

2 - Inside the "NDA" folder:

- 2.1 Run the script "Main_NDA.m", to simulate show the dependance of the NDA-NBR mechanism with changes in its specific parameter. (Figure 1B)
- 2.2 Function scripts "nda_neuronal.m" and "nda_hrf_f.m" are called by the main script to compute the neuronal and the hemodynamic response respectively.

3 - Inside the "ANC" folder:

- 3.1 Run the script "Main_ANC.m", to simulate show the dependance of the ANC-NBR mechanism with changes in its specific parameter. (Figure 1C)
- 3.2 Function scripts "anc_neuronal.m" and "anc_hrf_f.m" are called by the main script to compute the neuronal and the hemodynamic response respectively.

4 - Inside the "ABS" folder:

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- 4.1 Run the script "Main_ABS.m", to simulate show the dependance of the ABS-NBR mechanism with changes in its specific parameter. (Figure 1D)
 - 4.2 Function scripts "abs_neuronal.m" and "abs_hrf_f.m" are called by the main script to compute the neuronal and the hemodynamic response respectively.
- 5 - Inside the "Classification" folder, find the script "set_SVM.m", which takes the "normalized_data.mat" file with features matrix (255x17) and prepares the data to use the "Classification Lerner" app for SVM.
- 6 - Inside the "Input_function" folder, find the function script "IED_function.m", which generates the IED spikes as the input function that is called in all NBR mechanisms simulation.