Voluntary Response Data Analysis GUI User Guide

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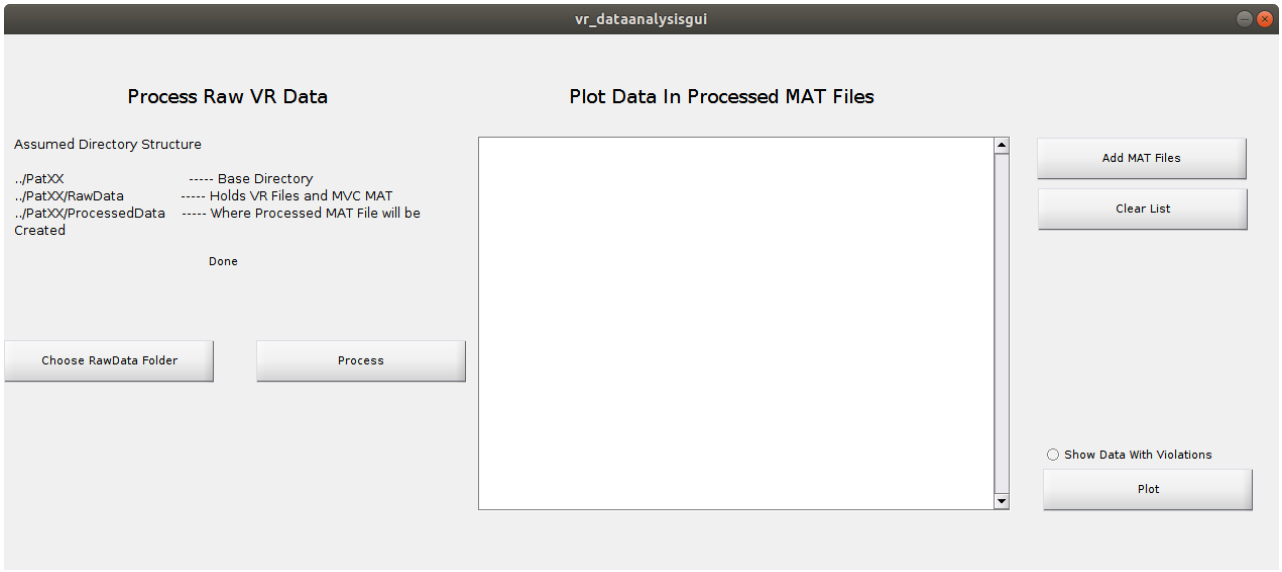
Use:
This GUI serves to analyze data from its raw state to complete plots in 2 steps.

Assumptions (READ THIS!!!):
For this GUI to work a directory structure must be in place. It is as follows

../PatXX
../PatXX/RawData
All of your voluntary reflex trials and the PatXXMVC.mat file for a given patient must be in the RawData folder.
Ex:
../Pat50/RawData/Pat50MVC.mat
../Pat50/RawData/PatNo52_VR_AnklePosNeutral_DF_0-20Hz_Trial1.txt
../Pat50/RawData/PatNo52_VR_AnklePosNeutral_DF_0-20Hz_Trial2.txt
Etc.
../PatXX/ProcessedData
This directory will be created if it doesn't already exist. This is where the PatXXProcessedData.mat will be created. If one already exists it will be replaced when you process the raw data files.

GUI Layout:



Steps:

Getting Your Directory Structure Correct

1. It is imperative that your directory structure matches what it written in the Assumptions section of this document. This program will not work if you do not follow it correctly.

Opening The GUI

1. Open the vr_dataanalysisgui.m file and press Run. This will open the GUI. You cannot just open the .fig file, it will not work properly.

Processing Raw Data

1. Press 'Choose RawData Folder' button. This will open a file dialog box. Choose the ../PatXX folder. (Do not choose ../PatXX/RawData!)

2. Press 'Process' button.
    a. This willl:
        i. Create the ../PatXX/ProcessedData directory if not already created
        ii. Delete the ../PatXX/ProcessedData/PatXXProcessedData.mat file if it exists
        iii. Run ALL of the voluntary reflex trial raw data files that have the form
            PatNoXX_VR_XXXXXX_XX_X-XXHz_TrialX.txt
            through the ProcessRawData.m function

            Note: It will not take voluntary reflex trials with step reference signal. Another analysis script would have to be written for that.
        iv. Create the ../PatXX/ProcessedData/PatXXProcessedData.mat file. This MAT file will be used when Plotting Processed Data.

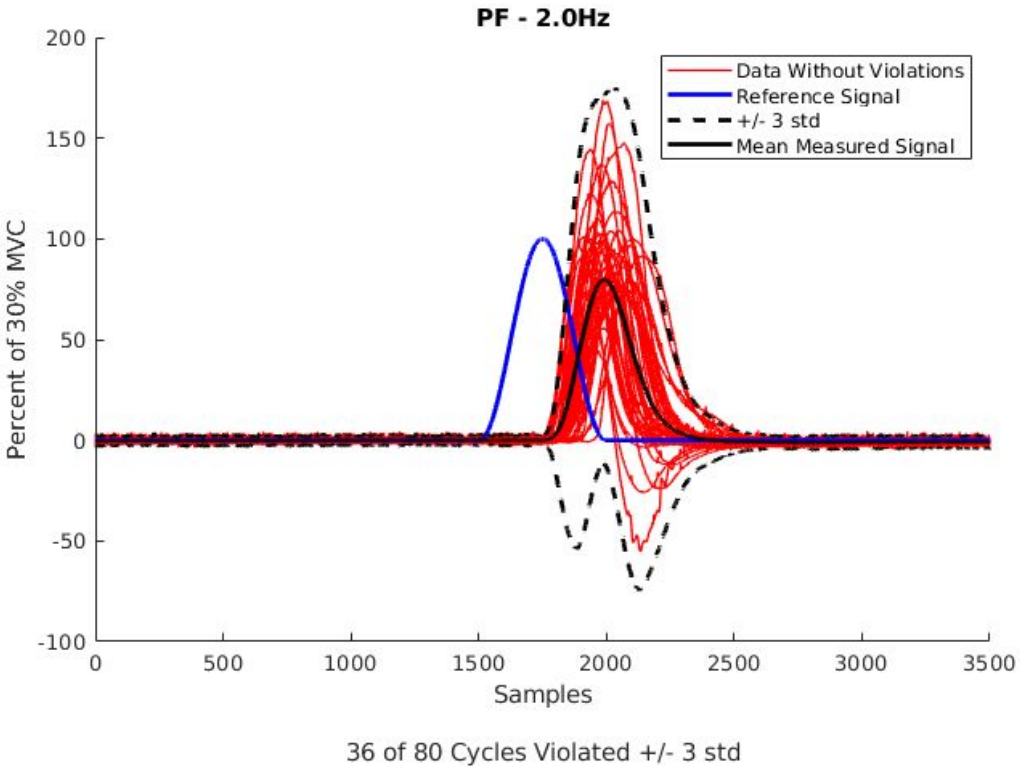
Plot Data in Processed MAT Files

1. Press 'Add MAT Files' and choose your MAT files you made in the 'Processing Raw Data' section of this document. You may have to use this button multiple times to get all of your MAT files you would like to process.

   Note: It is important you process all of the MAT files together as all of the data must be used together to form means/ standard deviations.
2. [Optional] If you made a mistake on your list of MAT files, press 'Clear List' to clear the list.
3. [Optional] If you would like to show the Plots with Data that has +/- 3 std violations, press the radiobutton with the label 'Show Data with Violations'
4. Press 'Plot' button.

Example Plots:

Plot Excluding Data With Violations [Default]



Plot Including Data with Violations