Direction & Workflow

The program is designed for analysis of two-photon imaging with Oregon Green BAPTA-1-AM. In five steps, the responsive neurons are labeled, calcium intensity traces and

This program was written in MATLAB 2017b, we recommend MATLAB 2017a or higher version to run the program.

At least 8 GB RAM memory is required to run the program.

Required toolbox:

Neural Network Toolbox (for Deep Learning)

Image Processing Toolbox

Signal Processing Toolbox

MainStart.m outlines the processing procedure with 5 sections, please run it step by step.

Section 1: Input the **name** and **location** of the data that you want to analysis in your PC. The **frame rate** of the imaging data is another input. After running this section, a .m file is generated. All data generated by later steps are stored in this file.

Section 2: Run this section to generate the reference image.

Section 3: Run this section to generate the region of interest. Please balance the accuracy and recall by the ‘**ROIThreshold**’.

Section 4: Run this section to generate the calcium signals and get the spikes. Please adjust ‘**FilterThreshold**’ to get a moderate filter strength. Please balance the accuracy and recall by the ‘**PeakThreshold**’.

Section 5: in this section, you can select or delete the peaks manually.