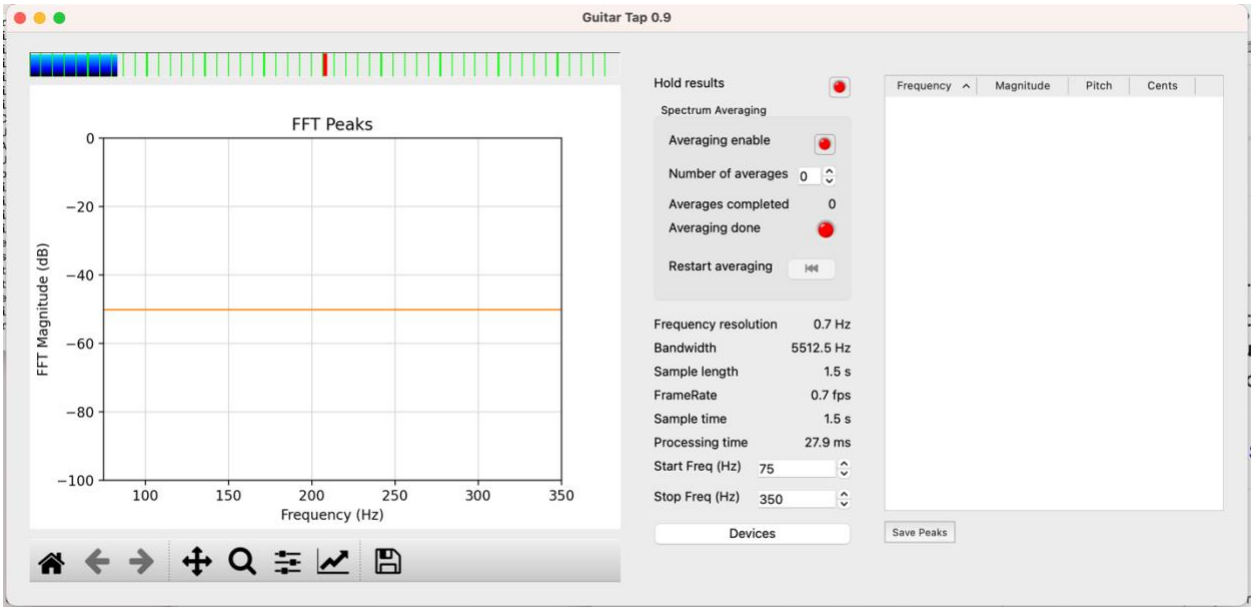
Guitar Tap

Here are some thoughts to get started:



The screen is separated into 3 regions:

1. FFT Peaks plot with slider for setting threshold level: all on the left.
    a. To start seeing peaks for samples move the slider (Red bar above the words FFT Peaks) left or right. This will move the red threshold bar in the middle of the plot up and down. Peaks that are above the threshold will show up in the table on the right.
    b. The controls below the plot are used to pan/zoom and reset the views. The control on the right that looks like floppy disk can be used to save the current view of the FFT plot to an image format.
    c. Each of the peaks are displayed as dots on the plot and can be selected which will result in the corresponding row in the Peak Table to be highlighted.
2. Peaks Table on the right. This displays the calculated peaks for the waveforms. These peaks are interpolated from the sampled data and provide higher accuracy than can be directly red from the chart.
    a. The columns can be selected at the top to sort the data in ascending or descending order.
    b. The rows can be selected which will result in the peaks on the FFT Peaks plot being selected.
    c. Selecting an area below the rows will result in the selected peaks in the table and the FFT Peaks plot being deselected.
    d. The Save Peaks button below the table is used to save the contents of the table to CSV format (which can be loaded in Excel, Numbers, or a host of other programs).
3. The region between the FFT Peaks plot and the Peaks Table control sampling.

a. The Hold results button (Red button to the right of Hold results text) is used to stop the update of the FFT Peaks plot and the Peaks Table. That is, hold the last waveform sampled.
b. The Averaging enable button (Red button to the right of the Averaging enable text) is used to start averaging the waveform samples. You should probably set the number of averages you want before enabling the averaging.
c. The Number of averages defines how many samples are taken, averaged, and then held.
d. The Averages completed and Averaging done show the progress.
e. The Restart averaging button (rewind icon to the right of the Restart averaging text) is used to reset the samples and start over.
f. The Information below the Spectrum Averaging group of controls shows information related to the samples being taken.
g. The Start Freq/Stop Freq controls limit the peaks that are calculated and shown in the Peaks Table to the frequency range specified.
h. The Devices button is used to display the Audio interfaces on the computer and the ones marked with Default are the ones being used.

I would recommend letting the tool free run (i.e. Hold results off and Averaging enable off – buttons as read) to run some tests with your microphone and tapping on the guitar or the top/back plates to get a feel for the threshold level you want to use. Once that is determined then I would set the number of averages desired and enable averaging or just turn Hold results on to save and analyze a waveform.

NOTE: I tend to select the peaks from the Peaks Table instead of the FFT Peaks plot. If you find the points in the Peaks plot unresponsive check to make sure that the Pan or Zoom mode (buttons on the bottom row) are not selected. You cannot pan/zoom and select peaks in the FFT Peaks plot at the same time. You can pan/zoom and select peaks in the Peaks table at the same time.

Hopefully this will help you get started.

Please let me know of any success, failures, bugs, or suggestions.

Regards
David