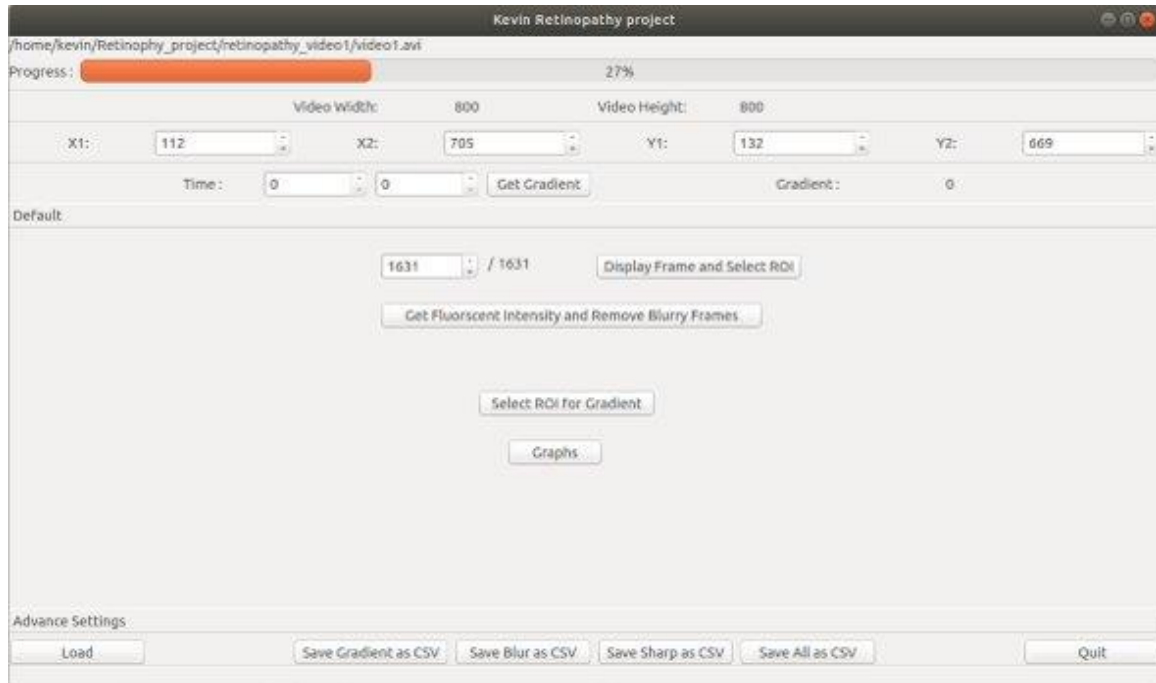
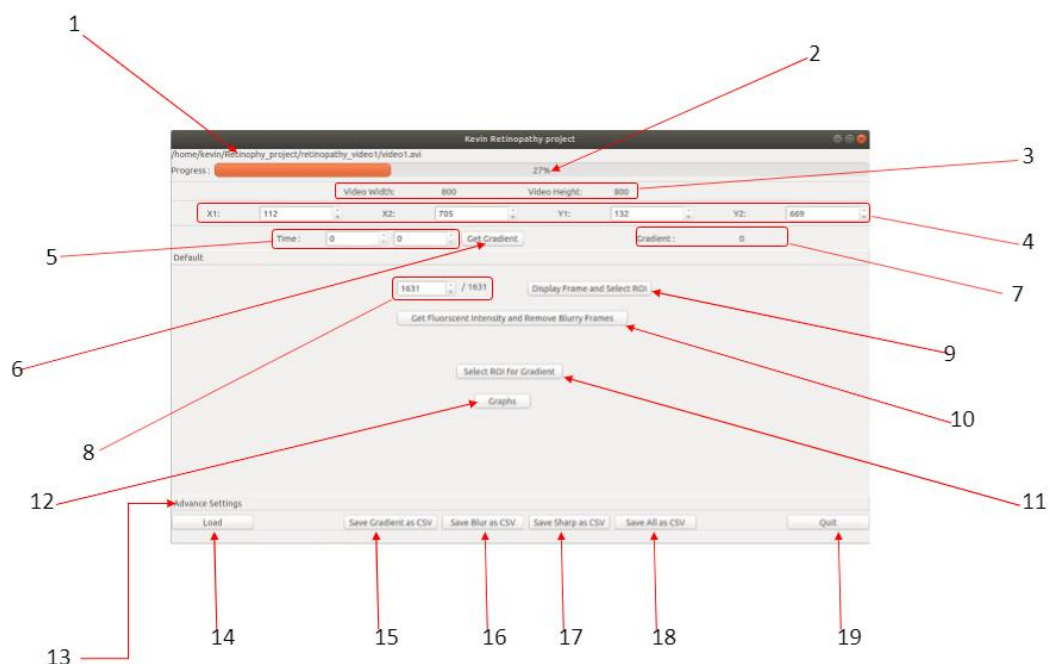
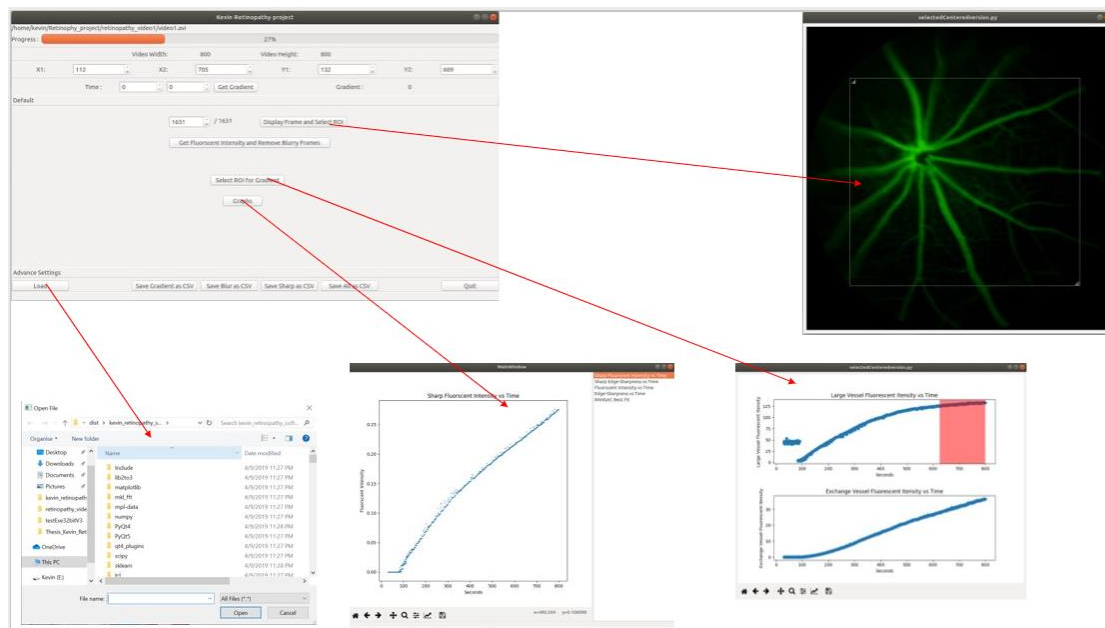


Kevin Retinopathy Software User Guide



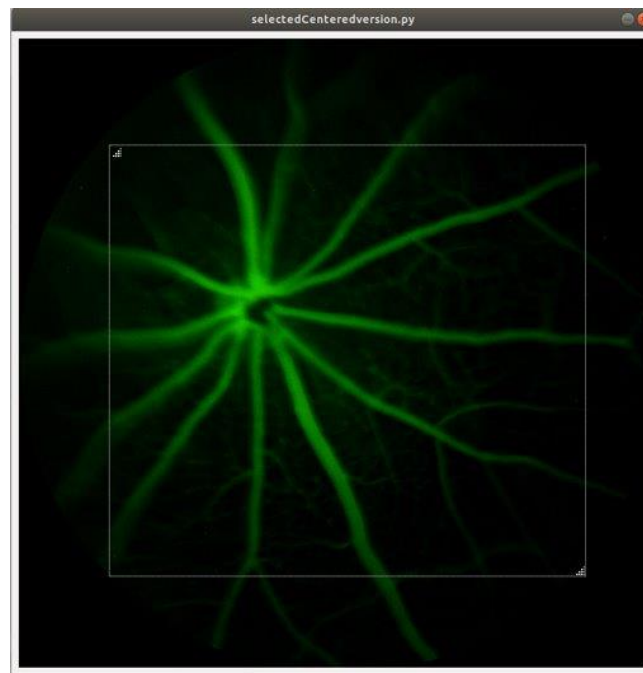


You may have to drag and enlarge the window to see all the buttons in the middle.

Step 1: click number (14) to load in the video, **it must be a video**, then you will see (1) show the file location of the video, (8) show the maximum number of frame that you can show, if it is -1, you loaded in non-video file, then (3) will show the width and height of the video.

Step 2: input the frame number you want to see in (8), if it is black choose later frames

Step 3: you can just directly input the desire pixel coordination at (4), or click the button (9) then a pop-up window will show up to show the selected frame and a rectangle selector



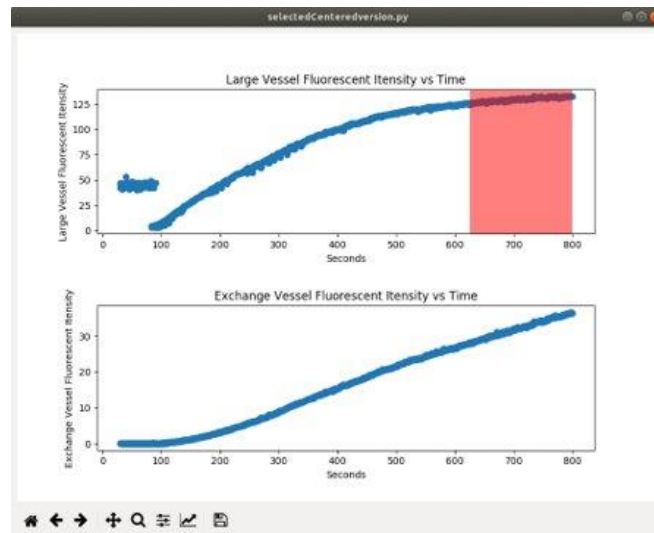
To drag and move the rectangular selector, **Right mouse click inside the box and drag it around.**

To expand the selector, **Left mouse click the top left or bottom right corner and drag to expand.**

Then the selected pixel coordinate will appear in (4), you can still change the value by type in the value. **Please X2 must be bigger than X1, Y2 has to bigger than Y1 when you input**

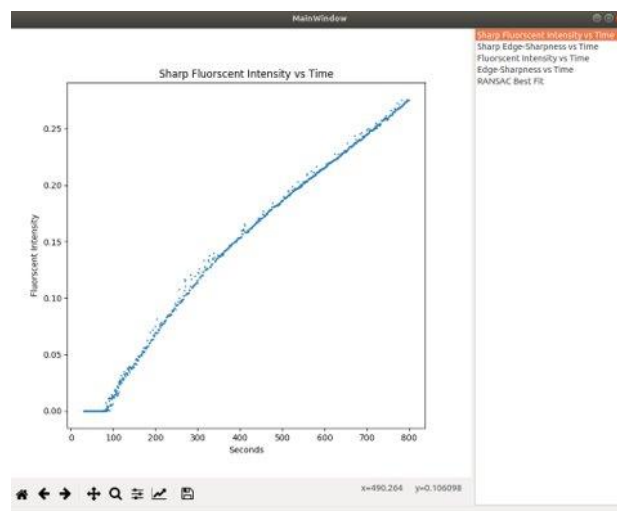
Step 4: click button (10) to start the fluorescent intensity ratio calculation and remove all the blurry frames, the progress bar (2) will show the progress. **Recommend do not click any button until the progress bar is 100%**

Step 5: input direct time interval in the spin box (5) and click the button (6), the gradient will display in (7) , **or** you can click the button (11) and show the page with the large vessel and exchange vessel fluorescent intensity vs time graph as below.



Only the top graph allows you to **left click** and drag left and right to select a time interval. After selected the right time interval, just close the window on the top left corner. The tool bar at the bottom allow you to zoom in and drag and save the graph. After closing the window, the selected time interval will show in the (5) and the gradient will display in the (7). **You can change the number in the (5) if you want, but after you change you need to click the button (6) to get the new gradient.** If you select the time interval from the graph, you **do not** have to click button (6) to get new gradient.

Step 6: **Only after you obtain the gradient**, you can click the button (12) to get the following window.



The list of name of the right allow you to click and show the corresponding graph. At the bottom there is the graph tool bar (matplotlib lib), the house icon is to zoom back out to original size, the cross icon allow you to drag and move to different region when you zoom in, the magnifying glass icon is zoom in, the floppy disc logo allow you to save the graph as image.

Step 7: you can click the button (15)(16)(17)(18) to save the results.

Save all ----- is save the data before blur removal.

Save sharp -----is saving only the sharp data points

Save blur -----is saving only the blurry data points

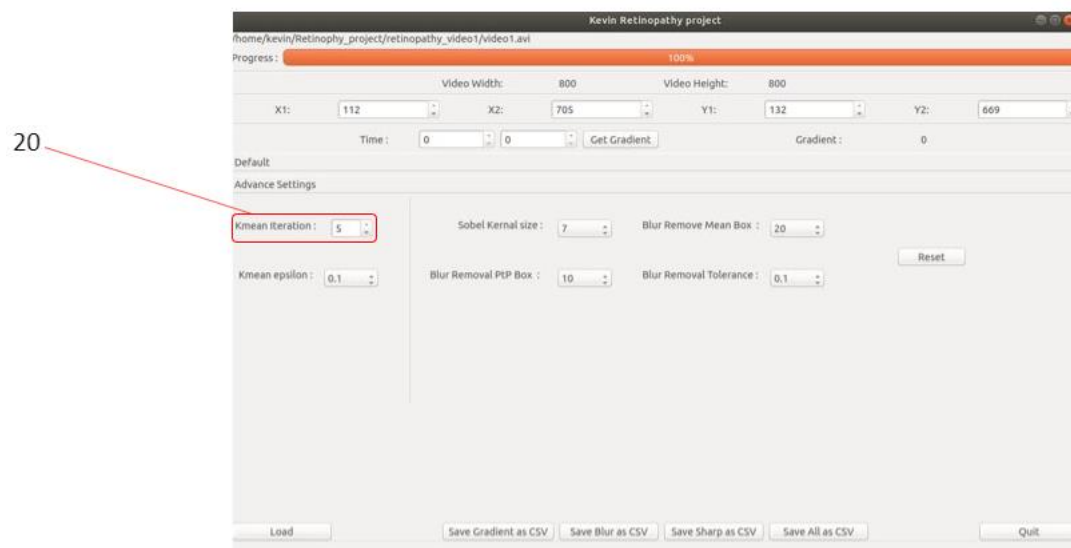
Save gradient -----is saving the selected time interval data point and the gradient predicting line (RANSAC linear regression) which is the straight fitting line, and the gradient value.

You must put .csv after the name of the file in the file dialog, for example video1.csv, sharp.csv ...etc.

Then you can open in Excel otherwise you can't. Then change it to the Excel format inside Excel.

#####

(13) is clickable which will show you the advance page.



Before step 4, lower the value in (20) will speed up the run time but the gradient accuracy may be lower. You can set from 1 to 15. 1 is very fast and 15 very slow. The default 7 should give very good accuracy already. Further detail please read my thesis. You can always press the reset button to set every thing into default.