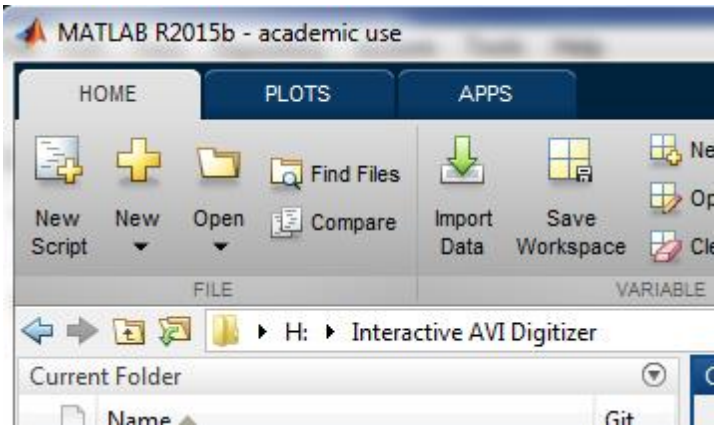
Interactive AVI Digitizer User Guide

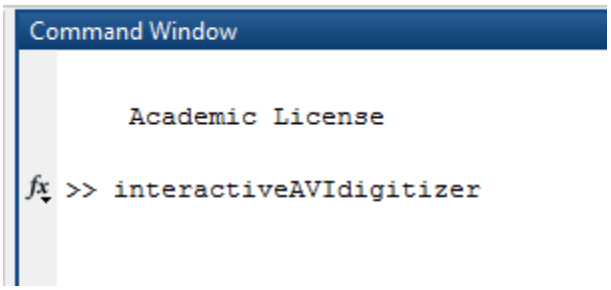
Before you begin:

- The code assumes that the first frame of the AVI is also the first frame you want to start digitizing. If this is not the case, extract a clip from the original video using a program like Photron's PFV.
- You will need the following information:
    - The mm to pixel conversion factor for your video (in mm/pix).
    - The location of the origin in any other analyses you have conducted, in pixels. For example, DaVis (PIV software) does not necessarily set the origin to the lower left corner. In DaVis, the origin location can be read from the Calibration screen, as the "x0" and "y0" values. This will allow you to plot tracks on top of your analyzed images.

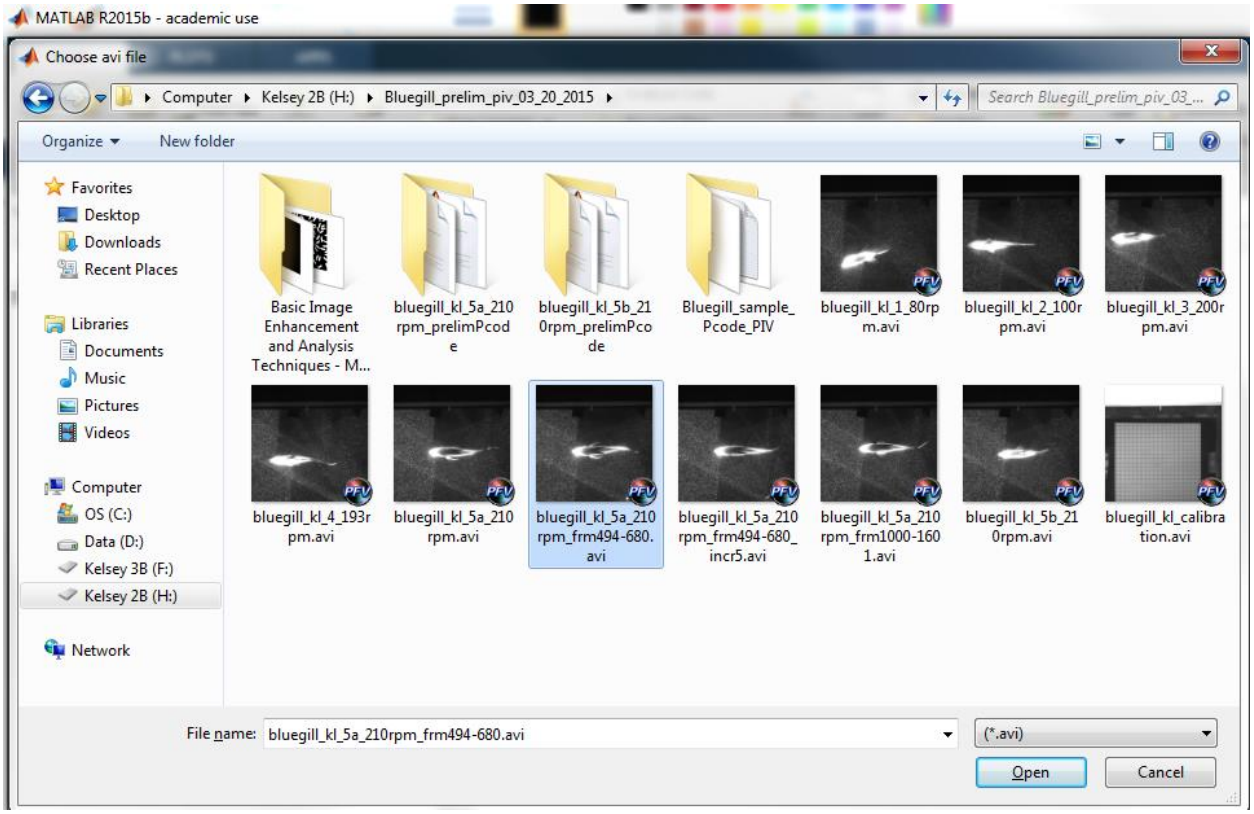
1. Set working folder to the Interactive AVI Digitizer folder, or add this folder to the current MATLAB path.



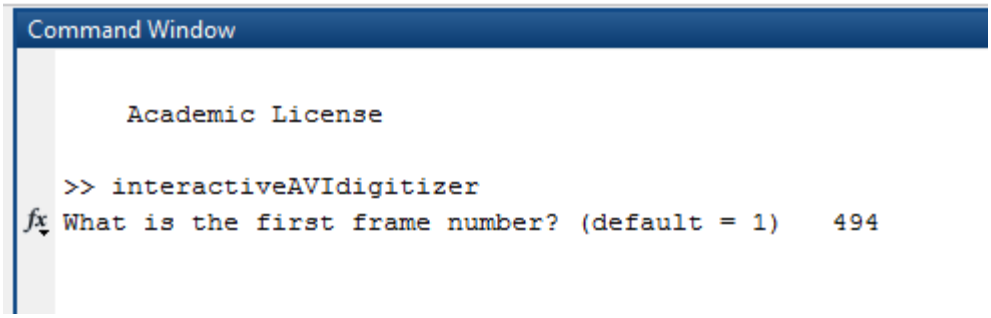
2. Type interactiveAVIdigitizer in the Command Window and hit enter.



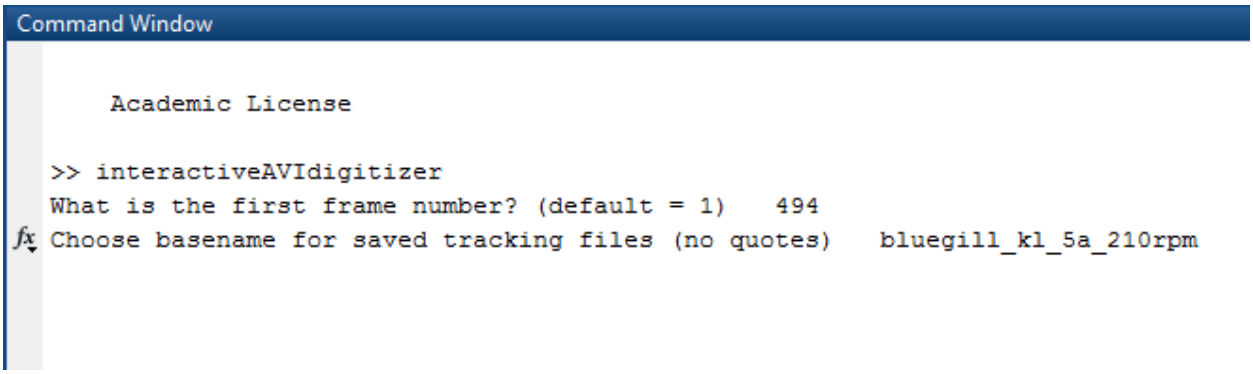
3. Use the dialog window that appears to select the AVI segment you want to digitize.



4. Enter the frame number associated with the first frame of the AVI. In our example, we examine subset frames 494-680 from the original video, so we would enter 494.

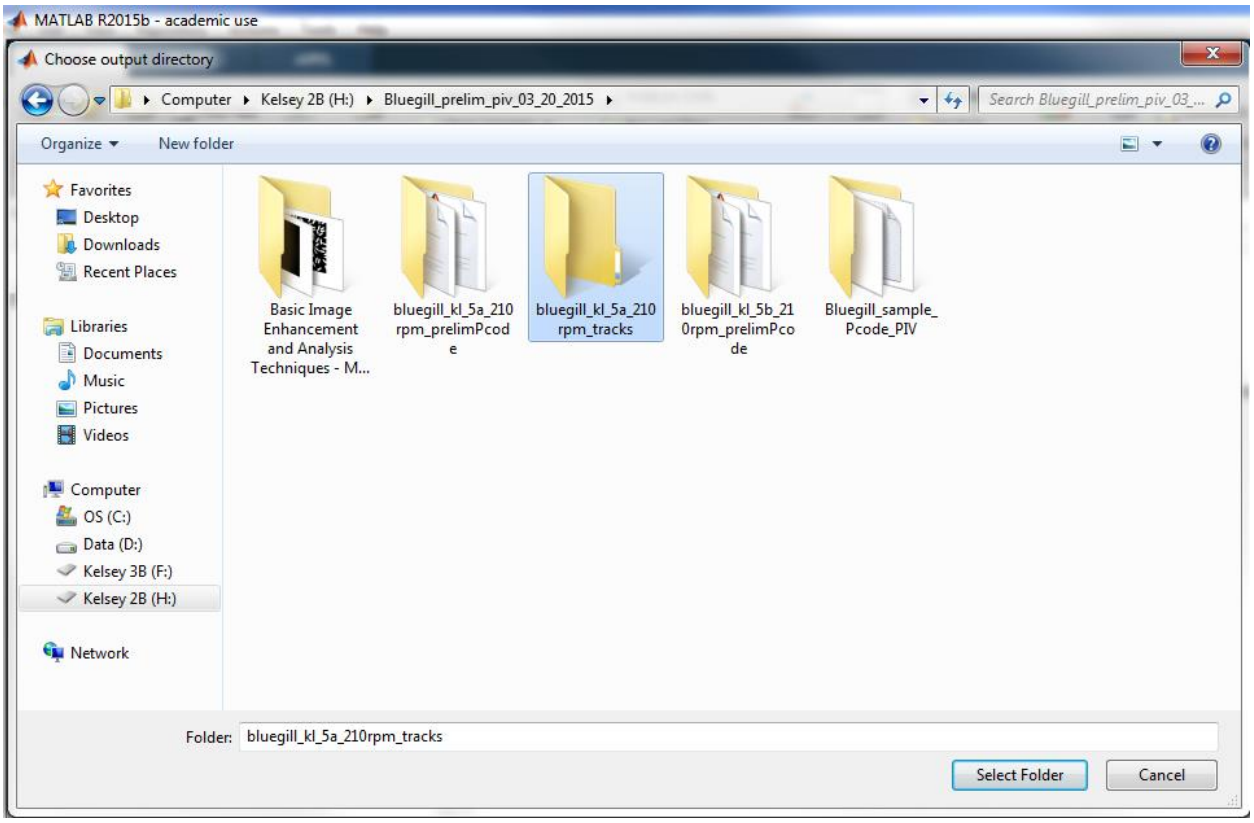


5. Enter the root of the filenames you will be saving without quotes (normally indicate strings). In the example, the root is bluegill_kl_5a_210rpm

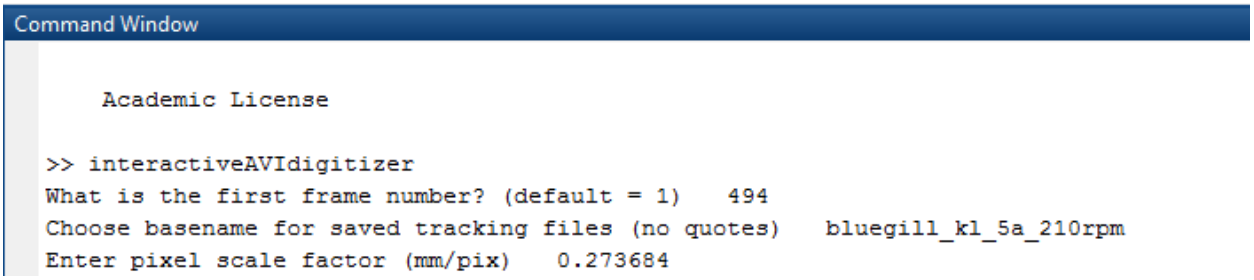


The saved files will take names in the following format: bluegill_kl_5a_210rpm-track-00494.dat

6. Use the dialog window that appears to set where you want the files to be saved.



7. Enter the conversion factor for pixels to mm. In our example, the conversion is 0.273684 mm/pixel.



8. If the origin of the x- and/or y- axes need adjustment, enter 1, otherwise, enter 0. The code will automatically set the origin to the lower left corner if no adjustment settings are given. Skip to step 11 if 0 is entered.

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Command Window

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>> interactiveAVIdigitizer
What is the first frame number? (default = 1)    494
Choose basename for saved tracking files (no quotes)    bluegill_kl_5a_210rpm
Enter pixel scale factor (mm/pix)    0.273684
Does origin need adjustment (ex: match a DaVis calibration)? 1 = Yes, 0 = No    1
```

9. Enter the pixel value where the x-origin should be located.

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Command Window

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>> interactiveAVIdigitizer
What is the first frame number? (default = 1)    494
Choose basename for saved tracking files (no quotes)    bluegill_kl_5a_210rpm
Enter pixel scale factor (mm/pix)    0.273684
Does origin need adjustment (ex: match a DaVis calibration)? 1 = Yes, 0 = No    1
Enter x0 position (ex: x0 value on DaVis calibration screen)    173
```

10. Enter the pixel value where the y-origin should be located (note: in images, the origin is in the UPPER left – y-axis is flipped from standard presentations. Read y-value from the image's axes as is, with the origin in the upper left.)

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Command Window

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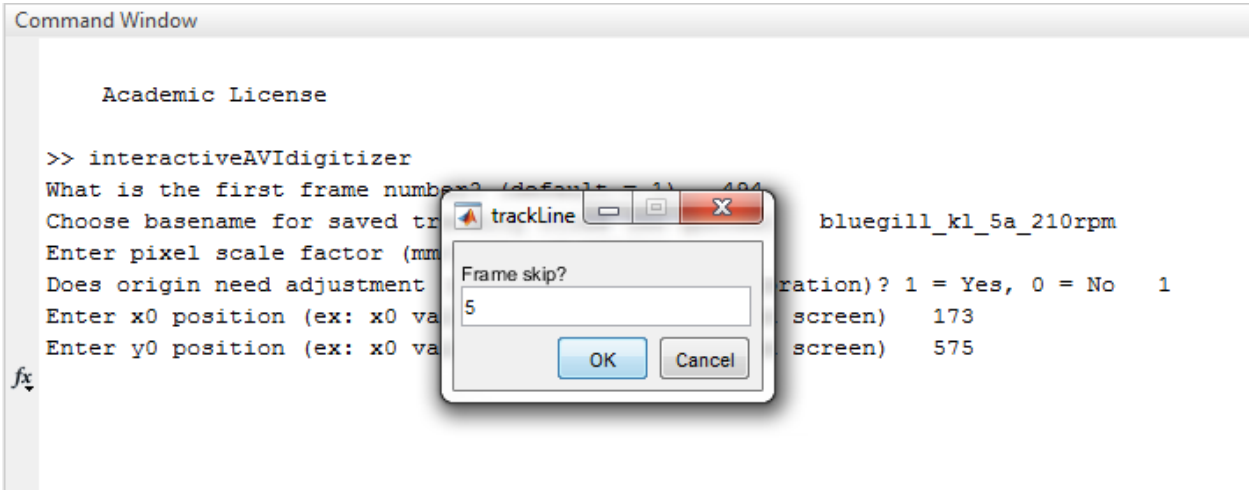
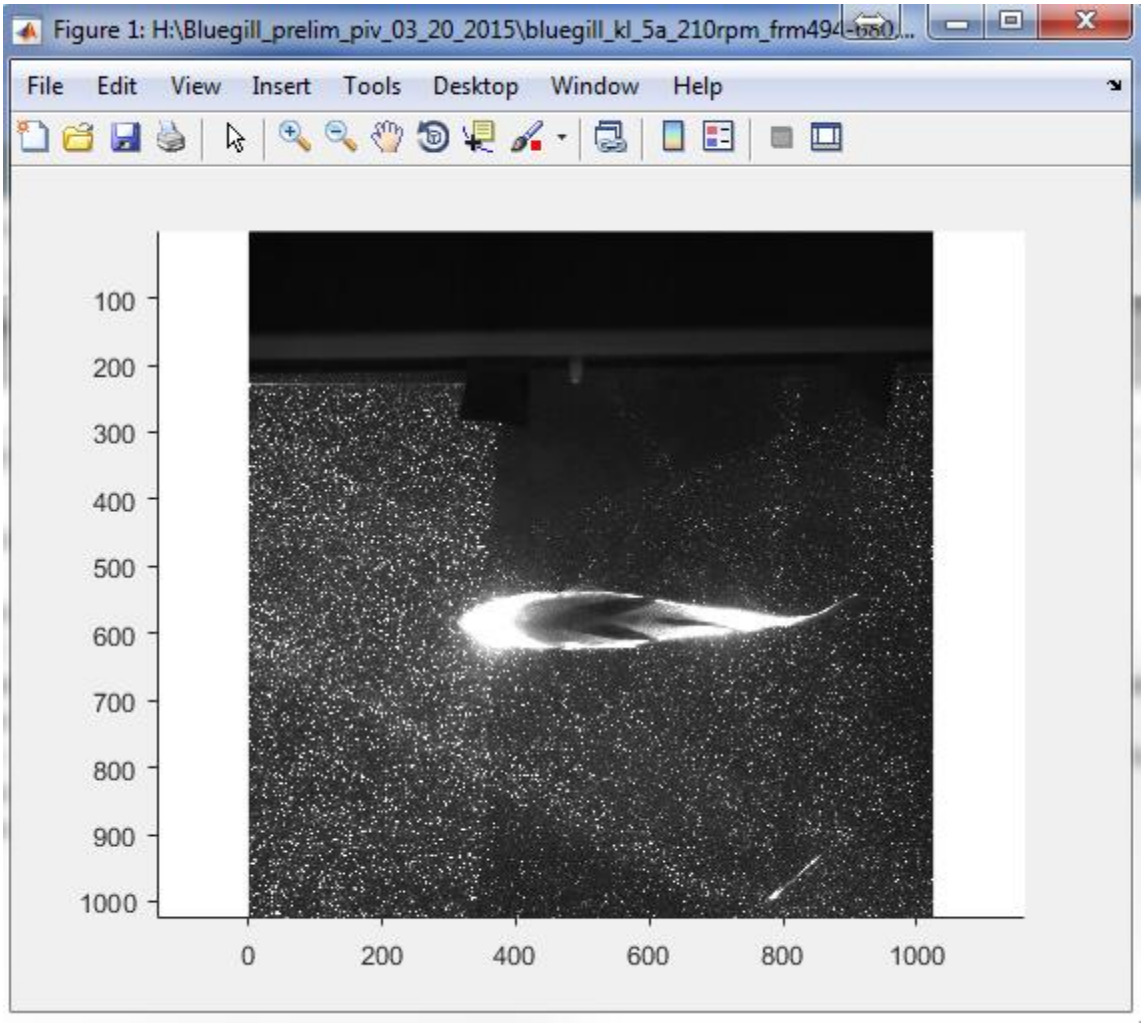
>> interactiveAVIdigitizer
What is the first frame number? (default = 1)    494
Choose basename for saved tracking files (no quotes)    bluegill_kl_5a_210rpm
Enter pixel scale factor (mm/pix)    0.273684
Does origin need adjustment (ex: match a DaVis calibration)? 1 = Yes, 0 = No    1
Enter x0 position (ex: x0 value on DaVis calibration screen)    173
Enter y0 position (ex: x0 value on DaVis calibration screen)    575
```

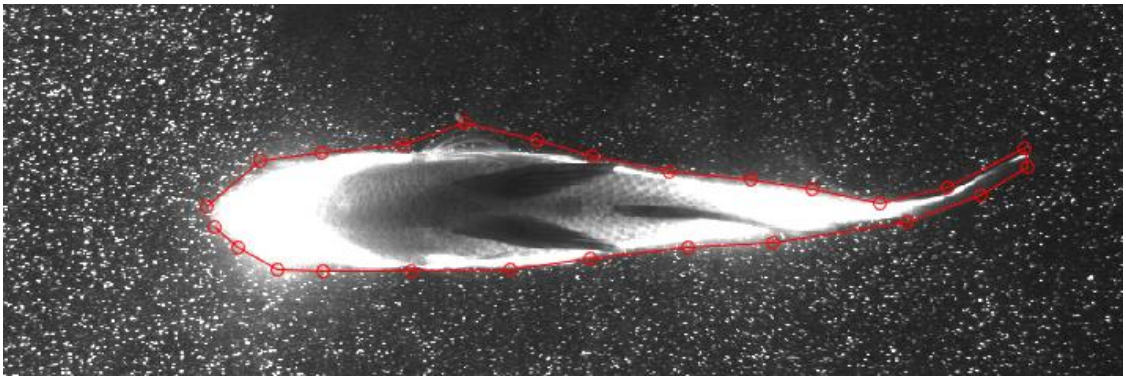
11. Set frame increment for digitizing. In our example, we only want to digitize every 5th frame, so we set the increment to 5.



12. A figure window will appear with the first frame in your video. For best digitizing results, maximize this figure to full screen.



13. Click on the image to draw your trace. The red dots can be dragged to make small adjustments. Add or remove points on the line by right-clicking on the line and selecting the appropriate option from the drop-down menu.



14. When satisfied with the track:

- Click “enter” to move on to the next frame. The current trace will be saved automatically. You can then manipulate the points so that the line matches the new image. OR,
- If this is the last frame you want to analyze, press “q.” The on-screen trace will be saved.
- Note, if you hit “enter” and nothing happens, you have reached the last frame. Hit “q” to escape and end.