

MouseWalker FAQs, Version 2, Dec 2022.

Q: Should I use 250fps?

A: Not necessarily. 250 fps will give you very good temporal resolution, meaning you will get a finer detail in the step transitions. However, if you go at a lower frame rate you still get most of the features with good quality. Currently cameras that run around 100fps are inexpensive and will give plenty of useful data.

Q: What's the best camera model for the MouseWalker?

A: Any camera should be fine as long it provides a minimal frame rate and resolution. Bassler and PointGrey make good cameras. A lot dSLR's can also produce high-speed videos.

Also important is the type and quality of output files, check if the camera's software can generate long enough videos compatible with your protocol and with the MouseWalker. Although the MouseWalker can read a large set of formats we have good results with png sequence files.

Q: What kind of lens should I use?

A: Any lens should work as long it is compatible with the camera. However two features are important. First, it should be a fast lens, i. e. with a large aperture or small F-stop values. This means it will capture more light. Second, the lens should not generate optical distortions. A block of 1 cm should have the same size at the center of the image and on the edge. One way to test for optical distortion is to record a checkered pattern and on imageJ measure the size of each square on the center and the edge of the image. You should have variations smaller than 5%. A wide angle lens is a terrible option.

Q: The camera has a C-mount, do I need a C-mount lens?

A: No, you can use an adaptor for your lens. B&H or Amazon sell c-mount specific adaptors for your lens.

Q: What additional software do I need?

A: The matlab script requires MATLAB. The current script will run with MATLAB 2013. More recent version might not work. You should also need Excel installed. Excel should be in English since some commands generated by the matlab script are in English (for example "AVERAGE").

Q: What are the minimum requirements for the computer running the MouseWalker?

A: Any PC should run the script. However, a faster computer will allow you a faster auto-tracking image, faster image scrolling and faster generation of output files. Also a good graphics card is useful. Also a SSD hard drive will help. For this reason a laptop is not the best choice.

Q: How do I increase the analysis speed?

Two factors will speed up the MouseWalker workflow. First, a faster workstation with a SSD and a good graphics card. Second and most importantly, crop the video only where the mouse walks and make sure the video starts and ends with the mouse in frame.

Q: Are the settings important?

A: Yes, very important. Sometimes changing one unit will make a big difference. Particularly important are the body and footprint thresholds. We recommend changing these parameters up or down (sometimes) by one unit and then press “preview”, this will give you an idea if the changes had a positive effect.

Q: Are there any key shortcuts?

A: Yes, there are plenty of shortcuts to make your life easier. In particular shortcuts for the view mode are useful. Switching between keys “1” and “3” will tell you if the MouseWalker tracking (“3”) will match the fTIR signal (“1”).

Q: The script works on Octave?

A: No. But feel free to try.

Q: May I change the script?

A: YES! You should to adapt to your needs. If you think this a relevant change please share it with us!