Alex Batchelor Olveczky lab rotation write up

**Annotation software**

I performed annotation using a program called ANVIL. You can download it from here:

<http://www.anvil-software.org/>

It seems to have pretty good documentation and the tutorials on the website are good to learn how to do annotation.

**Preparing videos for annotation**

To annotate videos in this software you need to change the codec and put them in 10min or so chunks. You can do this automatically using a MATLAB function I wrote: chunkGroomingMovies.m. Note that you will need to change the paths specified in this file to get it to work properly. You will also need to put the batch files batch.bat and concatGroomingMovies.bat in the appropriate folders.

**Annotation specification**

Once you have movies in 10min chunks open them in ANVIL. You then need to load the behavioural specification. You can use the behavioural specification that I made: BehaviourSpec.xml. You can use this spec to annotate rearing, eating, grooming, resting, task, exploring and drinking although it’s easy to add more. Just watch ‘Tutorial 6: Working with a specification file’ on the ANVIL website ([http://www.anvil-software.org/#](http://www.anvil-software.org/)) to work out how to do this. To annotate the file, watch the video and press ‘s’ for start and ‘e’ for end to mark the beginning and end of a behaviour. Then go back and select the behavioural element and I added shortcuts to the specification so you just have to click ‘r’ say to mark the element as rearing. Once you’re done annotating click File>Export>Annotation Frame-By-Frame. At this point, make sure to unclick “Exclude last frame”. Note that for some reason ANVIL deletes the first frame of each video you load in (each 10min video that is) but I allow for this when aligning video to accelerometer data in the categoriseBehaviour2.m. This export will produce a file with four columns. The first column is the frame number and the fourth is a column called behaviour:behaviouralElement. This fourth column contains a number for each frame which indicates the behaviour that the annotator classified that frame as according to the key in the behaviour spec. So for my spec the key is:

behaviour:behaviouralElement

0 = none

1 = rearing

2 = eating

3 = grooming

4 = resting

5 = task

6 = exploring

7 = drinking

**Importing data into matlab**

Use importAnnotationData MATLAB code.