How to analyse ephys and movement data, a guide

* Electrophysiology
  + All your recordings should be in a folder that looks like this:
    - C:\Ephys data\Chronic ephys\Chronic\_mouse5\_383780\Electrophysiology\Day 2\Trial1…
    - Separate folder for each trial
  + Run concatenate\_files.m to concatenate the individual trial recordings into a combined.dat
  + Run kilosort on combined.dat and set the output to C:\Ephys data\Chronic ephys\Chronic\_mouse5\_383780\Electrophysiology\Day 2\kilosort
* 3D data
  + The video recordings should be named in the following convention: Camera\_#\_trial\_#... and all in a single folder
  + Run Deeplabcut on all of these videos to get a .csv file for each
  + Run Triangulation\_loop.m with the directory where your .csv files reside; you also need the correct camera matrix (‘P’) 🡪 your raw 3D coordinates are now stored together in concatenated or separated by trial in separated
  + If there are more than number of body points -2 NaNs for any individual frames, you need to remove the ‘NaN frames’ so the next point will work 🡪 store the NaN values somewhere
  + Run main\_3D\_SSM\_recpnstruct\_luka which takes as input concatenated and will return concatenated refined 3D coordinates
* Joining ephys and 3D data
  + Prepare the spiking data by only extracting ephys data from all trials and binning it into bins of individual frames
  + Prepare the body cam data by splitting it into trials again and add back the NaN values
  + Create larger bins with Larger\_bins script