*Title:GoProLensFront*

*Description: Front view of gopro with the lens. One video, 2.7k at 120 fps, of uninjured mouse*

*Log File:* *"C:\Users\vjj14\Desktop\DeepLabCut\goprolensfront-vj-2019-06-25\loggoprolensfront.txt"*

*Date:*

1. *Initialization (Pose Config):* *"C:\Users\vjj14\Desktop\DeepLabCut\goprolensfront-vj-2019-06-25\config.yaml"*
   1. *Function Call: create\_new\_project(task,experimenter,video, working\_directory= r'C:\Users\vjj14\Desktop\DeepLabCut', copy\_videos=False)*
2. *Frame Extraction:*
   1. *Function Call:* *deeplabcut.extract\_frames(path\_config\_file,'automatic','uniform',crop=False)*
      1. *From time 1:48 to 2:48*
   2. *Extraction Method: uniform*
   3. *Number of Frames: 200, cut down to 136*
3. *Frame Labeling:*
   1. *Comments (frames skipped, ambiguity, labels):*
      1. *Not bad, not a lot of pellets, not a lot of fingers*
4. *Train Network:*
   1. *Function Call:* *deeplabcut.train\_network(path\_config\_file, saveiters=1000, displayiters=100, maxiters=60000)*
   2. *Network Iteration: 1st network, iter=0*
   3. *Number of Iterations:60k*
   4. *Time Elapsed: 3:37*
5. *Evaluate Network:*
   1. *Train:12.81*
   2. *Test:30.2*
   3. *Train with p-cutoff:12.08*
   4. *Test with p-cutoff:21.94*
6. *Analyzing Videos:*
   1. *Videos:* *"C:\Users\vjj14\Desktop\DeepLabCut\goprolensfront-vj-2019-06-25\videos\2.7k-6-26.mp4"*
      1. *Frames:* *9374*
      2. *Frame Size:* *2704 1520*
      3. *Time Elapsed: 24:19*
7. *Created Labeled Video:*
   1. *Time Elapsed:4 min 51 seconds*

*Comments:*

*This was scrapped completely. The training frames were not very good, the results were not very good during the reaches. After this, we moved on to more specialized data collection: cutting small clips of reaches, grabbing lots of frames, and then pruning down to the more important ones.*

***Train Network from scratch with more training data***

1. *Frame Extraction:* 
   1. *Function Call:* *deeplabcut.extract\_frames(path\_config\_file,'automatic','uniform',crop=False)*
      1. *From 17- 3second clips of grabs of 1080p video, 4 clips of 2.7k*
   2. *Extraction Method: uniform*
   3. *Number of Frames: 50, cut down to 5-14 each*
2. *Frame Labeling:*
   1. *Comments (frames skipped, ambiguity, labels):*
      1. *Not bad, not a lot of pellets, not a lot of fingers*
3. *Train Network:*
   1. *Function Call:* *deeplabcut.train\_network(path\_config\_file, saveiters=1000, displayiters=100, maxiters=60002)*
   2. *Network Iteration: 1st network, iter=0*
   3. *Number of Iterations:60k*
   4. *Time Elapsed: 3:18*
4. *Evaluate Network:*
   1. *Train:15.36*
   2. *Test:18.8*
   3. *Train with p-cutoff:12.63*
   4. *Test with p-cutoff:15.49*
5. *Analyzing Videos:*
   1. *Videos:* *"C:\Users\vjj14\Desktop\DeepLabCut\goprolensfront-vj-2019-06-25\videos\2.7k-6-26.mp4"*
      1. *Frames:* *9374*
      2. *Frame Size:* *2704 1520*
      3. *Time Elapsed:* *0:24:47*
6. *Created Labeled Video:*
   1. *Time Elapsed:4 min 51 seconds*

*Comments:*

*This the is the network I trained with the 1080p and split1234 data. I essentially scrapped it, so there’s not much to be used here. The resulting video was a bit lacking, with tracking placing a pellet estimation at the hands even if there is no pellet there.*

*7/1-7/3*

***Train Network from scratch with more training data***

*Description: Front view of gopro with the lens. One video, 2.7k at 120 fps, of uninjured mouse*

*MAIN VIDEO: "C:\Users\vjj14\Desktop\DeepLabCut\goprolensfront-vj-2019-06-25\videos\A\_6\_26\_2.7k.MP4"*

1. *Frame Extraction:*
   1. *Function Call:* *deeplabcut.extract\_frames(path\_config\_file,'automatic','uniform',crop=False)*
      1. *33 – 3second clips of 7:40 minute video 2.7k (labeled A). There was also 4 3 second clips from the ~1:18 second 2.7k video (named split1, etc, the bad pellet holder)*
   2. *Extraction Method: uniform*
   3. *Number of Frames: 100, cut down to 5-14 each. ~430 total frames labeled. The 4 folders of the split were labeled too, but with different labels, some of which not included.*
2. *Frame Labeling:*
   1. *Comments (frames skipped, ambiguity, labels):*
      1. *Not many frames skipped, good frames to label*
3. *Train Network:*
   1. *Function Call:* *deeplabcut.train\_network(path\_config\_file, saveiters=1000, displayiters=100, maxiters=60002)*
   2. *Network Iteration: 1st network, iter=0*
   3. *Number of Iterations:60k*
   4. *Time Elapsed: 3:38*
4. *Evaluate Network:*
   1. *I lost it. Remember to record it afterward everytime*
5. *Analyzing Videos:*
   1. *Videos:* *"C:\Users\vjj14\Desktop\DeepLabCut\goprolensfront-vj-2019-06-25\videos\A\_copied.mp4"*
      1. *Frames:* *55k*
      2. *Frame Size:* *2704 1520*
      3. *Time Elapsed:* *2:35:10*
6. *Created Labeled Video:*
   1. *Time Elapsed:31 min 53 seconds*
7. *Analyzing Videos:*
   1. *Videos:* *"C:\Users\vjj14\Desktop\DeepLabCut\goprolensfront-vj-2019-06-25\videos\6\_26\_2.7k\_copy.mp4"*
      1. *Frames:* ~*14400*
      2. *Frame Size:* *2704 1520*
      3. *Time Elapsed:* *0:24:47*
8. *Created Labeled Video:*
   1. *Time Elapsed:4 min 51 seconds*

***CONTINUE TRAINING NETWORK, ANOTHER 60K ITERS***

1. *Train Network:*
   1. *Function Call:* *deeplabcut.train\_network(path\_config\_file, saveiters=1000, displayiters=100, maxiters=60002)*
   2. *Network Iteration: 1st network, iter=0*
   3. *Number of Iterations:60k*
   4. *Time Elapsed: 2:48*
2. *Evaluate Network:*
   1. *Train:5.5*
   2. *Test:5.08*
   3. *Train with p-cutoff:4.6*
   4. *Test with p-cutoff:5.03*
3. *Analyzing Videos:*
   1. *Videos:* *"C:\Users\vjj14\Desktop\DeepLabCut\goprolensfront-vj-2019-06-25\videos\A\_copied.mp4"*
      1. *Frames:* *55k*
      2. *Frame Size:* *2704 1520*
      3. *Time Elapsed:* *2:35:10*
4. *Created Labeled Video:*
   1. *Time Elapsed:31 min 53 seconds*
5. *Analyzing Videos:*
   1. *Videos:* *"C:\Users\vjj14\Desktop\DeepLabCut\goprolensfront-vj-2019-06-25\videos\6\_26\_2.7k\_copy.mp4"*
      1. *Frames:* ~*14400*
      2. *Frame Size:* *2704 1520*
      3. *Time Elapsed:* *0:24:47*
6. *Created Labeled Video:*
   1. *Time Elapsed:4 min 51 seconds*

*COMMENTS:*

*Really like these, will probably continue using this network, perhaps begin to finalize DLC with this method. The tracking is pretty good, with much less phantom estimates, little pellets placed when there isn’t any.*

1. *Plots:*
2. *DataWrangling:*
3. *Results:*
4. *Comments:*