HAAG Weekly Report Week 3

Mercedes Quintana

Time-Log

- What did you do this week?
    - o Finalized landmarks
    - o Prepared/met with computer advisors
    - o Created a functional program to landmark
- What are you going to do next week
    - o continue landmarking
    - o Perfect zoom feature on tool for best accuracy

- Blockers, things you want to flag, problems, etc.
    - o None

Abstracts:

Link: https://www.nature.com/articles/s41592-019-0582-9

ilastik: interactive machine learning for (bio)image analysis

We present ilastik, an easy-to-use interactive tool that brings machine-learning-based (bio)image analysis to end users without substantial computational expertise. It contains pre-defined workflows for image segmentation, object classification, counting and tracking. Users adapt the workflows to the problem at hand by interactively providing sparse training annotations for a nonlinear classifier. ilastik can process data in up to five dimensions (3D, time and number of channels). Its computational back end runs operations on-demand wherever possible, allowing for interactive prediction on data larger than RAM. Once the classifiers are trained, ilastik workflows can be applied to new data from the command line without further user interaction. We describe all ilastik workflows in detail, including three case studies and a discussion on the expected performance.

Summary: This paper describes software that trains a model for pixel classification, object classification and counting and tracking as a human expert works through images.

What did you do and prove it

I finalized the landmarks for the additional landmarks I am going to provide for our project. I was able to get my program to display and save new and old coordinates. Unfortunately, I can't see the plot well enough to provide high quality landmarks. I have to implement a method to zoom to fix this. I prepared slides and met with the computer advisors for the project. I am excited to keep working with them. The left image shows the extra landmarks I am going to add and a portion of the presentation I gave at the meeting:

Dr. Stroud decided on the landmarks to add