HAAG Weekly Report Week 5

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Time-Log

What did you do this week?

- Finished the landmarking software
- Started annotating images
- Met with computer advisors
- Checked in with Dr. Stroud for app functionality

What are you going to do next week

- Keep website updated
- Start working on GUI as well as landmarking

Blockers, things you want to flag, problems, etc.

- None

Abstracts:

Link: https://www.nature.com/articles/s41592-022-01443-0

Multi-animal pose estimation, identification and tracking with DeepLabCut

Estimating the pose of multiple animals is a challenging computer vision problem: frequent interactions cause occlusions and complicate the association of detected keypoints to the correct individuals, as well as having highly similar looking animals that interact more closely than in typical multi-human scenarios. To take up this challenge, we build on DeepLabCut, an open-source pose estimation toolbox, and provide high-performance animal assembly and tracking—features required for multi-animal scenarios. Furthermore, we integrate the ability to predict an animal's identity to assist tracking (in case of occlusions). We illustrate the power of this framework with four datasets varying in complexity, which we release to serve as a benchmark for future algorithm development.
Summary: This group augmented the open source library for pose estimation, DeepLabCut, to also have features for many animal scenarios. To show their work, they tested it on four datasets of different levels of difficulty.

What did you do and prove it

After more fiddling with the program I wrote to annotate lizard toes, I was able to finally get started landmarking the lizards. With advice from our mentors, I decided to also, with Ayush, work on the GUI aspect of the project in order to start working toward publication. I have annotated only 20 images so far, but I am confident that I will now be able to do many more. Below I one of the slides I presented at the meeting with our mentors, explaining the

difficulties of viewing the toes with our image resolution.