

Week 6 Report

Wen Han Chia (Lizard Classification)

Time-Log

Additionally, the time-log should include any work you've done for your *role* work (e.g., meeting management, web management, programs management, etc.)

What did you do this week?

- Held the 3rd Bi-Weekly Computational Advisor meeting with Computational Advisor
 - o Updated about progress of image annotation
- Meeting Manager Role
 - o Recorded meeting, uploaded it to HAAG Youtube Channel and sent it on both Teams and Slack channels
- Lizard Anole species bounding box annotation
 - o Further annotated lizard species images. Current progress: Annotated 7000 images out of 10,000 initial requirement for fine-tuning object detection model

What are you going to do next week

- Continue annotating lizard dataset
- Create scripts to standardize all images to have the same dimensions

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

Abstracts:

Wei, Xiu-Shen, et al. 'Mask-CNN: Localizing Parts and Selecting Descriptors for Fine-Grained Bird Species Categorization'. Pattern Recognition, vol. 76, Apr. 2018, pp. 704–14. DOI.org (Crossref), <https://doi.org/10.1016/j.patcog.2017.10.002>.

Fine-grained image recognition is a challenging computer vision problem, due to the small inter-class variations caused by highly similar subordinate categories, and the large intra-class variations in poses, scales and rotations. In this paper, we prove that selecting useful deep descriptors contributes well to fine-grained image recognition. Specifically, a novel Mask-CNN model without the fully connected layers is proposed. Based on the part

annotations, the proposed model consists of a fully convolutional network to both locate the discriminative parts (e.g., head and torso), and more importantly generate weighted object/part masks for selecting useful and meaningful convolutional descriptors. After that, a three-stream Mask-CNN model is built for aggregating the selected object- and part-level descriptors simultaneously. Thanks to discarding the parameter redundant fully connected layers, our Mask-CNN has a small feature dimensionality and efficient inference speed by comparing with other fine-grained approaches. Furthermore, we obtain a new state-of-the-art accuracy on two challenging fine-grained bird species categorization datasets, which validates the effectiveness of both the descriptor selection scheme and the proposed Mask-CNN model.

What did you do and prove it

1. Continued annotating on Roboflow
 - Labelled a total of 7000 anole species images.
 - Image 1 shows the labelled and reviewed images Green Anole (2000 images)

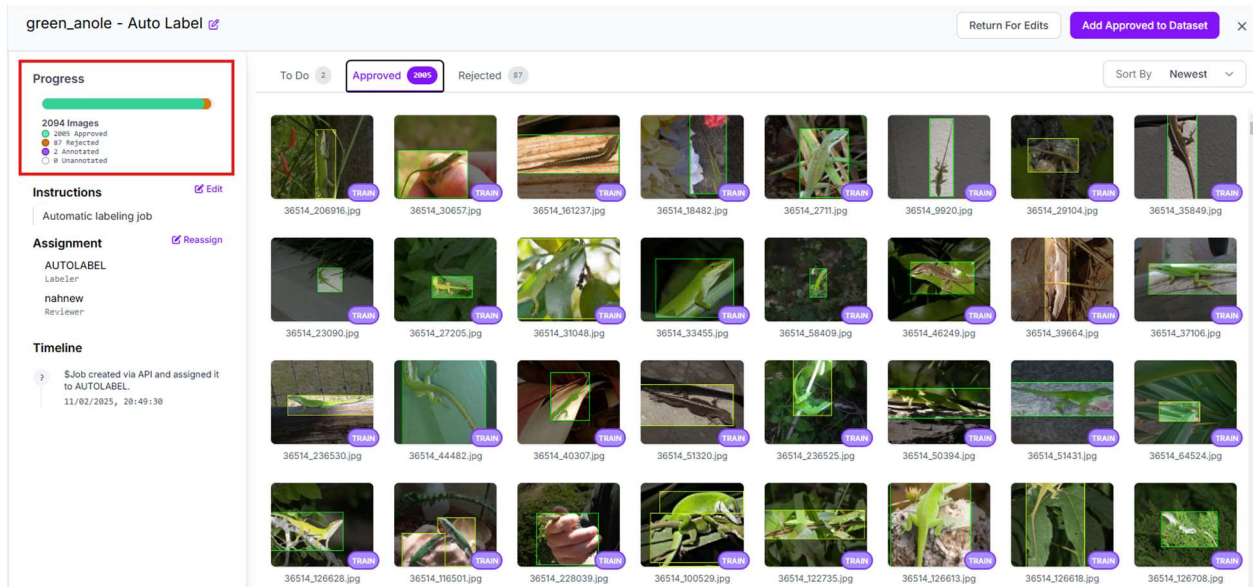


Image 1