Caleb Perez & Tzofi Klinghoffer July 27, 2017

This directory comprises our work this summer, including finalized training and test image sets, fully-documented scripts, and pre-trained software. Locations and detailed descriptions for these items are as follows:

* **Final training set:** Fully-annotated set of 5063 HabCam images used to train. Annotations are included in both VOC XML format and text files compatible with the Darknet architecture. Location: "All Image Sets/Final Dataset (Training and Test, Images and Txt)"; "All Image Sets/Final Dataset (XMLs)"
* **Final test set:** Contains 300 images with 100 instances of scallops, 100 of roundfish, 50 of skates, and 50 of flatfish. Full annotations are given in both XML and Darknet Txt formats. Location: "All Image Sets/Final HabCam Test Set"
* **Cropped test set:** Contains the same 300 images, but cropped about areas of expected high electrical activity to simulate the results of electric field-assisted preprocessing (403 images total). Annotations in XML and Txt format. Location: "All Image Sets/Final HabCam Cropped Test Set"
* **Scripts:** Several potentially useful scripts that we found helpful throughout the training and testing process. Function varies from creating, renaming, or modifying files to reading data and performing analysis. Detailed documentation for each script can be found within the script itself. Location: Scripts
* **Pre-trained Darknet Algorithm:** Copy of the directory from which we were running our fully-trained HabCam algorithm. Once copied locally, the software should be ready to compile by running the command "make" from the darknet directory. Contains our final pre-trained weights, as well as our final .data, .cfg, and .names files. These should be enough to immediately make predictions on any new set of images using our pre-trained weights. By default, it is configured to compile without OpenCV or GPU support, so modifications to the Makefile are necessary to turn these options on. Location: Software/darknet
* **Pre-trained weights:** Fully-trained HabCam weights, .data, .cfg, and .names files. Can be directly incorporated into a pre-compiled Darknet algorithm. Location: "Software/Weights and Config Files"