

901902 - Unoccupied Aerial Vehicles for Science, Operations, and Outreach

Week 48

1. Danelle Cline
 - a. Processing and cleaning missions with improved ViTS model. Surprisingly, the model worked in a zero-shot manner, predicting an unseen jelly.
 - b. Added in some needed FastAPI endpoints for bulk data deletion

Week 46

1. Danelle Cline
 - a. Annotating processed missions

Week 44

1. Danelle Cline
 - a. Added cleanvision to exemplar pipeline to remove dark and blurry examples. Very few were removed.
 - b. Processing mission trinity-2_20241021T184730_MossLanding - there are some jellies in this and pinnipeds, but the reflectance removal is not handling many high-intensity reflections which are larger than normal.
 - c. Exported labeled data for collaborators Salvador Jorgensen of otters and sharks; Sal tags sharks, and he is interested in the co-existence of these species.

Week 42

1. Danelle Cline
 - a. 5th Marine Imaging Workshop in Monterey poster presentation and 1-minute lightning talk
 - b. Testing new one-class detector model
 - c. Board update slides

Week 38

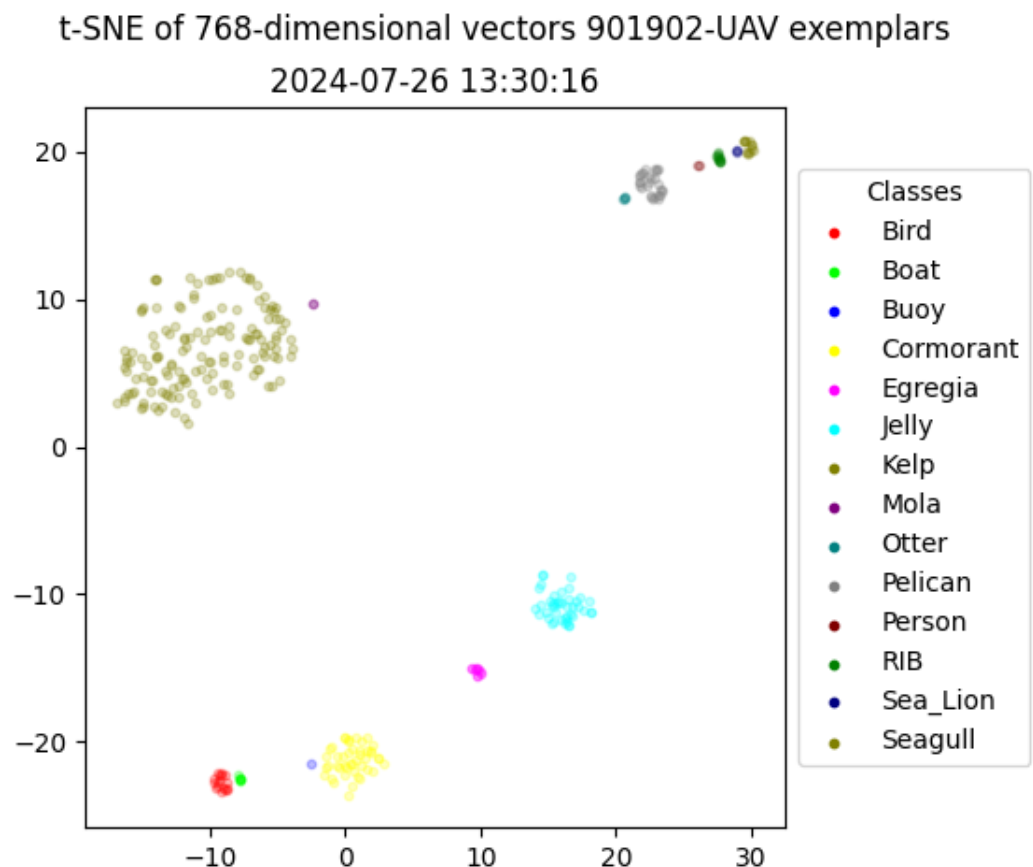
1. Danelle Cline
 - a. Labeling mission with batrays for inclusion in our vss library
 - b. Fixed some issues in the augmentation features of the aidata tool
 - c. Evaluating Argo Workflows as a way to orchestrate integrated machine learning workflows in mantis

Week 35

1. Danelle Cline
 - a. Team meeting with presentation on progress
 - b. Ansible deployment of REDIS fastapi-vss services to doris
 - c. Loaded recent deployment images to mantis
 - d. Refining metric graphs and scores for cross model comparisons
 - e. Working on apache-beam aipipelines for images
 - f. Updated [ai documentation](#)

Week 31

1. Danelle Cline
 - a. Adding in performance metrics to pipeline and refactoring for apache beam implementation
 - b. Per class performance metrics are top-3 accuracy .983, top-3 accuracy .947. Good class separation.



- c.
- d. Fixed bugs in small cluster edge cases and added batch inference for performance boost

Week 29

1. Danelle Cline
 - a. Finishing up detection, clustering and visual search inference pipeline design
 - b. Loaded backlogged mission images to mantis and populating vss database
 - c. Evaluating per class performance metrics

Week 23

1. Danelle Cline
 - a. Setup a slack bot called UAV bot for notifications of automated processing, and thanks for the good work by Daniel and Peter in IS and Duane, we now have 5 GPUs for use! 1 CPU will be the newly installed GPU IS supported GPUs attached to Doris.shore.mbari.org. Lastly, stubbed a REST endpoint for running our processing workflow which can send a message through the UAV bot.

Week 19

1. Danelle Cline
 - a. Project update presentation
 - b. Working ML whitepaper draft/proposal abstract input
 - c. Submitted IS help ticket to revive 4-GPU bo which has a failing SSD drive. Long-term solution needed with either on-premise GPUs or cloud compute.

Week 10

1. Danelle Cline
 - a. Working on REDIS workflow for automated data loading
 - b. Expense report for OSM
 - c. Researcher at [KAUST](#) who is using drones to monitor canopy stress has reached out about using our software to detect sting rays which can be seen in their low-altitude surveys

Week 9

1. Danelle Cline
 - a. OSM e-poster presentation. Minor changes to SDCAT.

Week 7

1. Danelle Cline
 - a. Lots of activity on OSM e-poster and lightning talk preparations.
 - b. Assisted with two flights.
 - c. Cleaning up sdcat code for open source release.

Week 1

1. Danelle Cline

- a. We have bird clusters for our team to validate. Do you see the mola among the birds?



b.