

902111 - Carbon Flux Ecology

Week 51

1. Danelle Cline
 - a. Evaluating [Voxel51](#) enterprise and community versions. So far, data visualization on training data sets is fast; corrections through the embedding lasso based query with our trained models is very intuitive. Model evaluation and integration with our vector database are on the radar. A big thanks to all who have helped, including Andrew McCann, Laura Chrobak, Kevin Gomes, and Henry Ruhl!!! Next steps are to evaluate its use on large collections of 200K and 1million localizations.
2. Brian Schlining
 - a. Revisiting <https://github.com/mbari-org/vars-legacy-migrator> to complete the import of image annotations from a very old VARS database into the current system

Week 48

1. Danelle Cline
 - a. Many discussions with vendors about enterprise tools for planktivore collaboration and general ML devops with Laura Chrobak
 - b. Quick testing of Voxel51 to better understand the API

Week 46

1. Danelle Cline
 - a. Meeting with [Voxel51](#) to discuss enterprise deployment and general capabilities. This tool has nice features such as similarity search and clever ways to interact with the data to speed-up and improve our labeling, QA/QC, etc. Could work with our existing REDIS vector database.

Week 42

1. Danelle Cline
 - a. Working on data mining for good examples in low-mag planktivore

Week 41

1. Danelle Cline
 - a. Supporting team validation of ISIIS model. Increasing CPU/memory on mantis.shore as needed for more users
 - b. Working on data mining aggregates for planktivore low-mag training data

Week 37

1. Danelle Cline
 - a. Testing [elemental_id loading feature #26](#)
 - b. Planktivore High Mag. Starting batch process using VSS (Vector Search System - a system designed that uses a vector database, embeddings from ViTs models, and a FastAPI to mine for rare examples in planktivore high mag data.

Week 35

1. Danelle Cline
 - a. Fixed zero-based issue in image crop. The lab is evaluating the performance of the latest model. Supporting new user questions and account setup.
 - b. Reviewed Ocean Science Meeting conference abstract
 - c. Reviewed L.Chrobak [Stratify PR](#). Thanks to Laura for the contribution!
2. Duane Edgington
 - a. Tator user account work.
3. Paul Roberts
 - a. Mini-sidekick controller design

Week 34

1. Paul Roberts
 - a. Mini-Sidekick controller design
 - b. Mini-Sidekick chassis design

Week 32

1. Danelle Cline
 - a. Planktivore meeting. Team to work towards a working pipeline by end of September.

Week 28

1. Danelle Cline
 - a. Hawaii ISIIS expedition clusters being labeled now by the team. Should have data soon to train a model. This is the first pipeline for CFE using video in mantis.
 - b. Redeployed Tator on mantis with new SSL certificates

Week 27

1. Danelle Cline
 - a. Loaded ~128K clustered ROIs for Hawaii ISIIS mission
 - b. Trying to nail down a challenging bug in cluster merge code.

Week 26

1. Danelle Cline
 - a. Finalizing processing pipeline for clustering ~3 million ROIs from ISIIS video taken during Hawaii expedition. This pipeline uses both a fine-tuned plankton model and a foundational model. Many thanks to Fernanda for her help generating ROIs and brainstorming ideas for the pipeline.
 - b. Planktivore team labeling second iteration of clustered labels.

Week 21

1. Danelle Cline
 - a. Finished performance and feature upgrades to sdcat to support processing larger collections with better reporting and export to parquet format. Release v1.21.0
 - b. Processing Hawaii ISIIS data 3 million ROIs on doris VM
 - c. Team meetings with Planktivore/CenCOOS groups to discuss workflow and next steps
2. Paul Roberts
 - a. Chiton deployment on LRAUV Triton

Week 19

1. Danelle Cline
 - a. Meeting with CenCOOS/planktivore team.
 - b. Trello board input on clustering tasks
 - c. Tried to process Hawaii ISIIS video with Biodiversity pipeline with no luck. Need a blob or segment model detector.
 - d. Laura C. has proceeded with training low-mag model per [classifier training instructions](#). So far so good. Expect to do another round of clustering with this model.

Week 17

1. Danelle Cline
 - a. Working on performance improvements to sdcat for CFE processing
 - b. Counsel t

Week 16

1. Paul Roberts
 - a. Mini-Sidekick housing design

Week 14

1. Danelle Cline

- a. Loaded low and high magnification planktivore cluster data into annotation server mantis.
- b. Generated new training data for Fernanda
- c. Continued work on ai documentation at <https://docs.mbari.org/internal/ai>
- d. Added support for reading YAML configuration from URL

Week 13

1. Duane Edgington
 - a. Team meetings regarding Planktivore

Week 12

1. Danelle Cline
 - a. Evaluating Argo as a way to orchestrate machine learning workflows
 - b. Performance improvement with [faster label query by project to mantis](#) so the team can get fast feedback on labeling. Redeployed through an ansible [playbook](#).
 - c. Training IFCB model for Planktivore clustering/prediction.

Week 11

1. Paul Roberts
 - a. Scuba-isiis batteries

Week 10

1. Danelle Cline
 - a. Discussion with team on CFE preprocessing and model results on a deployment. Three models Resnet18, DINO ViTs8 and ViTS16. Looks like we need a few more classes, e.g. diffuse blur. and to remove more “junk”. The blob detector may be too sensitive. Fernanda to explore changes to blob detector and some basic background subtraction.
 - b. Tator upgrade
 - c. ARGO Kubernetes sandbox.
 - d. SDCAT cluster mods to merge clusters on Planktivore low/high mag camera
2. Paul Roberts
 - a. Battery packs for scuba-isiis

Week 9

1. Paul Roberts
 - a. Battery power packs for suba-isiis deployment

Week 8

1. Danelle Cline
 - a. Added support to export ROIs to speed-up ISIIS processing pipeline

Week 7

1. Danelle Cline
 - a. Fecal pellet subclass and discussion with Fernanda about ROI preprocessing and model comparisons

Week 6

1. Danelle Cline
 - a. Downloaded training data set for Fernanda with missing bubbles category
 - b. Team plans to compare two models Resnet 18 and ViTs on a single ISIIS full mission.
 - c. Changed Docker build in aidata repo to use `pip install mbari-aidata`
2. Duane Edgington
 - a. Project meeting/working session Jan 30.
3. Brian Schlining
 - a. [Continuing work on migrating Station M image annotations into M3/VARS](#).
Working with Crissy on remapping deployments to more standardized names.

Week 5

1. Danelle Cline
 - a. Refactoring fastapi-tator
 - b. Scheduled ISIIS review meeting with team
2. Brian Schlining
 - a. Finished resurrecting [the ancient vars database layer](#) to support migrating of Station M image annotations into the current VARS db. [Deployed to maven central](#)

Week 4

1. Danelle Cline
 - a. Setup jupyter notebook for teams to use for training on doris as user mldevops

Week 3

1. Danelle Cline
 - a. Assisting Fernanda with model training and running inference
 - b. Loaded 5.4 hour ISIIS video
 - c. Setup jupyter server for model training on doris.shore.mbari.org using two IS maintained GPUs.

Week 2

1. Brian Schlining
 - a. Starting work to merge annotations from a very old VARS database (perseus:/VARS_Images) into the main M3_ANNOTATIONS database. The main challenge is resurrecting the old VARS database layer; many of the dependencies it used were hosted on a maven repo on bintray, which was “disappeared” a few years ago.

Week 1

1. Brian Schlining
 - a. Working with Crissy on [migrating image annotations](#) from a very old VARS system in the current one.