

Danelle Cline

Week 52

- 901009 - CANON
- 901103 - Biodiversity and Biooptics of Zooplankton
- 901221 - Midwater Time Series
- 901502 - Ocean Soundscape
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
- 902111 - Carbon Flux Ecology
- 902306 - SINKER
- Overhead
- Out of Office
 - Dec 22 - Jan 2: Vacation

Week 51

- 901009 - CANON
- 901103 - Biodiversity and Biooptics of Zooplankton
 - Trained RF-DETR models with single-class and multi-class for comparison. 0.95 mAP@0.5 best with single-class cteno sp. A.
- 901221 - Midwater Time Series
 - Evaluating pseudo-labels. Classification performance improvement ~ 10% when ambiguous categories, e.g. marine snow and marine organisms removed. Object detection model performance needs improvement.
- 901502 - Ocean Soundscape
 - Continued work on the real-time workflow. Integrated PBP simple API for creating hybrid millidecade netCDF for visualization with algorithm outputs.
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - [Argo workflow](#) created for running RF-DETR object detection model via k3s cluster. Next step is to deploy through the Tator admin console. This will allow any member of the team to process the images post-deployment without a need for programming.
- 902111 - Carbon Flux Ecology
 - 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.
- 902306 - SINKER

- Overhead
- Out of Office
 - Dec 22 - Jan 2: Vacation

Week 50

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- Overhead
- Out of Office
 - November 26th vacation

Week 49

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- Overhead
- Out of Office
 - November 26th vacation

Week 48

- 901009 - CANON
- 901103 - Biodiversity and Biooptics of Zooplankton
 - Trained RF-DETR large model. 0.91 mAP@50 for target species Ctenophora sp. A
- 901221 - Midwater Time Series
 - Processed two dives with argo kubernetes workflow & loaded tracks into the Tator. No issues other than Danelle's office getting really warm as the 4 GPUs work. Reviewed track results with Rob. Next steps are swapping out the tracker and experimenting with dropped frames to inform the i2MAP recording frame rate.
- 901502 - Ocean Soundscape
 - Working on real time workflow. Reviewed with John and now have an optimized flow design for hourly reporting. Expect to finish that next week.

- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
- 902111 - Carbon Flux Ecology
 - Many discussions with vendors about enterprise tools for planktivore collaboration and general ML devops with Laura Chrobak
 - Quick testing of Voxel51 to better understand the API
- 902306 - SINKER
 - Cleaned up the production deployment code [#1](#)
- Overhead
- Out of Office
 - November 26th vacation

Week 47

- 901009 - CANON
- 901103 - Biodiversity and Biooptics of Zooplankton
- 901221 - Midwater Time Series
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- Overhead
- Out of Office

Week 46

- 901009 - CANON
- 901103 - Biodiversity and Biooptics of Zooplankton
- 901221 - Midwater Time Series
 - Finished training RF-DETR Large model two ways: one with full i2MAP frame size 1920x1080, and the other with 640x640 augmented image crops. Despite the pseudo labels, roughly double the performance when training on augmented crops so this is the likely target for a production pipeline. Rob S to review pseudo

labels next week, then retraining with cleaned labels.



- Exploring [Argo](#) with simplified kubernetes for scaled video processing (and image processing).
- 901502 - Ocean Soundscape
 - Deployed [Google Humpback whale model](#) to Triton in preparation for real-time workflow
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Trained new ViT-S classifier
 - Working on missionview web application
- 902111 - Carbon Flux Ecology
 - 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.
- 902306 - SINKER
- Overhead
- Out of Office

Week 45

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- Overhead
- Out of Office

Week 44

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- Overhead
- Out of Office

Week 43

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- Overhead
- Out of Office

Week 42

- 901009 - CANON
- 901103 - Biodiversity and Biooptics of Zooplankton
- 901221 - Midwater Time Series
 - Trained new ViTS models with i2MAP and M3 data
 - Using REDIS-based vector database system VSS, prepared pseudo labels for training object detector [RF-DETR](#) model.
- 901502 - Ocean Soundscape
 - Supporting intern efforts on topic modeling, PBP doc updates, and migrated inference Triton server to Maximilian for testing real-time workflow.
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - missionview webapp updates
 - Meeting with former intern Tim to discuss updates on Kelp model.

- Created test dataset and loaded into version testdata on drone.mbari.org.
- 902111 - Carbon Flux Ecology
 - Working on data mining for good examples in low-mag planktivore
- 902306 - SINKER
 - Updated ansible deployment with README.txt and generated build.sh script to support build on target.
 - Issues with rsync failing due to the sinker thalassa NFS mount becoming unresponsive - this is the same problem we have seen with PAM_Analysis on gizo.shore and multiple shares on mantis.shore.
- Overhead
 - Organizing GitHub issues with CoreAI.
 - General maintenance on ansible deployments to ensure cron jobs are deleted from the remote.
 - Out sick 10-15
- Out of Office

Week 41

- 901009 - CANON
- 901103 - Biodiversity and Biooptics of Zooplankton
- 901221 - Midwater Time Series
 - Exported i2MAP training data to VOC+COCO format to share with video lab model training
 - Retrained i2MAP ViTS classifier
- 901502 - Ocean Soundscape
 - Zoom with Franny to discuss progress on unit labeling and topic modeling
 - Working on near realtime ML pipeline, some PBP support
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Generated random testset from drone.mbari.org
 - Trained ViTS classifier model with added classes for Seacliff site and improved Egregia localizations
 - Working on exploring Cursor+React web app with [uavscope](https://uavscope.org)
 - Zoom with Tim on [KelpCoverage](https://kelpcoverage.org)
- 902111 - Carbon Flux Ecology
 - Supporting team validation of ISIIS model. Increasing CPU/memory on mantis.shore as needed for more users
 - Working on data mining aggregates for planktivore low-mag training data
- 902306 - SINKER
 - Addressed [schema prune issue](#) although not resolved until today, thanks to K.Salamy help.
- Overhead
 - SINKER project scicom interview
 - Seminar
- Out of Office

Week 40

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- Overhead
- Out of Office

Week 39

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- Overhead
- Out of Office

Week 38

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- Overhead
- Out of Office

Week 37

- 901009 - CANON
- 901103 - Biodiversity and Biooptics of Zooplankton
- 901221 - Midwater Time Series
- 901502 - Ocean Soundscape
 - Deployed near realtime resampled wav files with ZMQ messaging for downstream ML pipeline
 - Team meeting to discuss summer intern collaboration next steps
 - Some rsync maintenance on EOL Centos7 machine. Need to replace this VM.

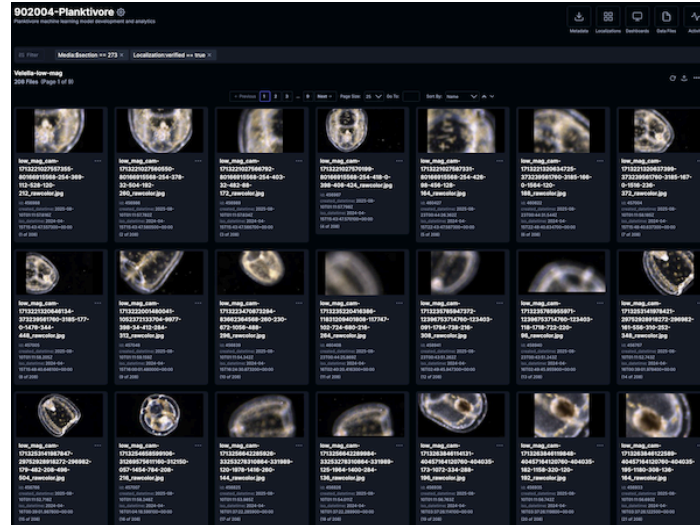
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Minor maintenance to remove some duplicate loads
 - Some refactoring of the ML pipeline to move Tator image loads earlier with Axiom image sync as needed for better downstream processing
 - Backlog processing.
- 902111 - Carbon Flux Ecology
 - Testing [elemental_id loading feature #26](#)
 - 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.
- 902306 - SINKER
 - Fixed [image brightness issue #10](#)
 - Trying to track down a strange issue with REDIS time series query not returning full data for multiple days as expected. Thanks to Karen S. for identifying this.
- Overhead
 - Project management training
- Out of Office

Week 36

- 901009 - CANON
- 901103 - Biodiversity and Biooptics of Zooplankton
- 901221 - Midwater Time Series
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- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
- 902111 - Carbon Flux Ecology
- 902306 - SINKER
- Overhead
- Out of Office

Week 35

- 901009 - CANON
- 901103 - Biodiversity and Biooptics of Zooplankton
 - Finish data mining the Planktivore 2025-2025 low-magnification dataset using a REDIS Vector Database service with a Vision Transformer (ViTs) model. Starting with only 10 examples of Velella, we found ~200 in a collection of millions. We will be using this same approach to mine for rare (long-tail) taxa in the Planktivore high-magnification dataset.



- 901221 - Midwater Time Series
 - Running cluster load pipeline to add more training data
 - Prototyping new tracking pipeline
- 901502 - Ocean Soundscape
 - Configured [Triton inference server](#) deployment of Google multispecies whale model for evaluation as part of a near real-time processing pipeline. Pretty straightforward.
 - Finished modifications for resampling as needed for downstream processing [MARS PR2](#)
 - Submitted help ticket for clock sync support on new recording computer
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Team meeting to discuss 2026 phase 2 proposal feedback.
- 902111 - Carbon Flux Ecology
 - Fixed zero-based issue in image crop. The lab is evaluating the performance of the latest model. Supporting new user questions and account setup.
 - Reviewed Ocean Science Meeting conference abstract
 - Reviewed L.Chrobak [Stratify PR](#). Thanks to Laura for the contribution!
- 902306 - SINKER
 - Adding REDIS time series support to ADCP data query
 - Development server is up and running sinkerdev.shore.mbari.org
- Overhead
 - Reviewing [KITOPS](#) packaging for ML/AI ops
- Out of Office

Week 34

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- 901103 - Biodiversity and Biooptics of Zooplankton
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- 902111 - Carbon Flux Ecology
- 902306 - SINKER
- Overhead
- Out of Office

Week 33

- 901009 - CANON
- 901103 - Biodiversity and Biooptics of Zooplankton
- 901221 - Midwater Time Series
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- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
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- 902306 - SINKER
- Overhead
- Out of Office

Week 32

- 901009 - CANON
- 901103 - Biodiversity and Biooptics of Zooplankton
 - Refactoring to merge planktivore low and high magnification configurations for VSS (vector database system for vector similarity search) into compose stack with other projects
 - Populated low mag augmented exemplar for searching velella medusae on single mission to test. CENCOOS team to finish preparing all planktivore low-magnification data for processing soon..
- 901221 - Midwater Time Series
- 901502 - Ocean Soundscape
 - Support summer intern model hyperparameter sweeps
 - PBP support and manual AWS opendata sync for Hawaii collaborator
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Intern meeting
- 902111 - Carbon Flux Ecology
 - Planktivore meeting. Team to work towards a working pipeline by end of September.
- 902306 - SINKER
 - Integrated ADCP data incoming from MARS to dashboard as SSE
 - Setup rsync from MARS to shore, deployed via [Ansible](#)
 - Investigating issue with low-frame rate refresh HLS stream on sediment cameras
- Overhead
 - ML workshop preparation and presentation
 - Proposal review
- Out of Office

Week 31

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- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
- 902111 - Carbon Flux Ecology
- 902306 - SINKER
- Overhead
- Out of Office

Week 30

- 901009 - CANON
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- 902306 - SINKER
- Overhead
- Out of Office

Week 29

- 901009 - CANON
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- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
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- 902306 - SINKER
- Overhead
- Out of Office

Week 28

- 901009 - CANON
- 901103 - Biodiversity and Biooptics of Zooplankton
 - VSS service is enabled with multi-GPUs and ready to run in bulk on plankton archives.
- 901221 - Midwater Time Series
 - Proposal work
- 901502 - Ocean Soundscape
 - Proposal work

- Reviewed PR to add support for REASA metadata to PBP. Successful contribution from the sound community!
 - Intern meeting
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Proposal work
 - Met with CSUMB collaborators to discuss progress on kelp coverage with SAM model, otter/shark detection. They contributed some difficult localizations of otters and validated sharks.
 - Intern meeting
- 902111 - Carbon Flux Ecology
 - 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.
 - Redeployed Tator on mantis with new SSL certificates
- 902306 - SINKER
 - Development of sinker backend video stream and nginx image host.
- Overhead
- Out of Office

Week 27

- 901009 - CANON
- 901103 - Biodiversity and Biooptics of Zooplankton
 - Performance improvements to FastAPI to vector database to improve similarity search with VSS on large collections.
- 901221 - Midwater Time Series
 - Proposal work
 - Downloading i2MAP training data for Kris to Ultralytics format
- 901502 - Ocean Soundscape
 - Team meeting & proposal work
 - Intern mentoring meeting and support for Humpback olive phrase work
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Intern mentoring and arranging upcoming meeting with collaborators to discuss shark/otter/kelp research
- 902111 - Carbon Flux Ecology
 - Loaded ~128K clustered ROIs for Hawaii ISIIS mission
 - Trying to nail down a challenging bug in cluster merge code.
- 902306 - SINKER
 - Working on backend design and development - mostly infrastructure
- Overhead
- Out of Office

Week 26

- 901009 - CANON

- 901103 - Biodiversity and Biooptics of Zooplankton
 - Performance improvements to Vector Search System (VSS) vector database for scalability to search for vellela in archives
- 901221 - Midwater Time Series
 - Minor exploration of tracking using botsort
- 901502 - Ocean Soundscape
 - Intern mentoring weekly meeting and modifications to [topic modeling](#) code to support Franny's project. Addressing many questions. Humpback Topic Modeling for olive humpback phrase
 - Addressed PBP issue #78
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Annotation system moved to <https://drone.mbari.org> debugging issues with SSL failure through python API. Shark localizations verified by external collaborators.
 - Intern meeting with Tim. Addressing many questions. Kelp coverage using Meta Segment Anything Model (SAM).
- 902111 - Carbon Flux Ecology
 - 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.
 - Planktivore team labeling second iteration of clustered labels.
- 902306 - SINKER
 - Researching ideas for backend design.
- Overhead
 - Updated AI docs <https://docs.mbari.org/internal/ai/>
- Out of Office

Week 25

- 901009 - CANON
- 901103 - Biodiversity and Biooptics of Zooplankton
- 901221 - Midwater Time Series
- 901502 - Ocean Soundscape
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
- 902111 - Carbon Flux Ecology
- 902306 - SINKER
- Overhead
- Out of Office
 - Vacation 5/26-5/30

Week 24

- 901009 - CANON
- 901103 - Biodiversity and Biooptics of Zooplankton
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- Overhead
- Out of Office
 - Vacation 5/26-5/30

Week 23

- 901009 - CANON
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- Overhead
- Out of Office
 - Vacation 5/26-5/30

Week 22

- 901009 - CANON
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- Overhead
- Out of Office
 - Vacation 5/26-5/30

Week 21

- 901009 - CANON
- 901103 - Biodiversity and Biooptics of Zooplankton
- 901221 - Midwater Time Series
 - Finished processing i2MAP_20250402 300 meter day/night transect with custom YOLO BioTracker strided no tracking
- 901502 - Ocean Soundscape
 - Soundcape recording is running steady now after some adjustments to the network settings to allow for longer timeouts
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach

- Assisting as VO for flights
- Briefly tried the tool <https://www.animaldetect.com/> . Worked at 0% confidence threshold on uncluttered drone images to detect larger megafauna. Limited to 1G for free version Worth trying further on images with high reflectance.
- Met with collaborator to discuss shark/kelp data
- IS request for new VM drone to host data externally for broader access
- 902111 - Carbon Flux Ecology
 - Finished performance and feature upgrades to sdcat to support processing larger collections with better reporting and export to parquet format. Release v1.21.0
 - Processing Hawaii ISIIS data 3 million ROIs on doris VM
 - Team meetings with Planktivore/CenCOOS groups to discuss workflow and next steps
- 902306 - SINKER
- Overhead
 - Group meeting on authentication
- Out of Office
 - Vacation 5/26-5/30

Week 20

- 901009 - CANON
- 901103 - Biodiversity and Biooptics of Zooplankton
- 901221 - Midwater Time Series
- 901502 - Ocean Soundscape
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
- 902111 - Carbon Flux Ecology
- 902306 - SINKER
- Overhead
- Out of Office
 - Vacation 5/26-5/30

Week 19

- 901009 - CANON
- 901103 - Biodiversity and Biooptics of Zooplankton
 - Continued running data mining pipeline for cteno. Expedition data query and thalassa access seem very slow and data migrations to thalassa are disruptive. Some contention on GPU machine doris doing the work with other projects that need GPU compute.
 - Discussion about proposal
- 901221 - Midwater Time Series
 - Trained new i2MAP classifier ViTs models for 8,16, and 32 block sizes
 - Processed i2MAP_20250402 dive with 1 second 3 stage YOLO + ViT + cluster pipeline and loaded to [mantis](#).

- Processing i2MAP_20250402 300 meter day/night transect with custom YOLO BioTracker strided tracking to compare to 415K YOLOx detection/tracking. Developing a workflow for fast dive summary.
 - Discussion about proposal
- 901502 - Ocean Soundscape
 - Debugging issues with recording drop-outs. IS and MARS staff are actively involved in the investigation as the errors are network related.
 - Email notification is broken on cetacean.
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Update to processing pipeline to support either per mission or mission discovery level processing.
 - Processed mission trinity-2_20250422T171024_NewBrighton
 - Team meeting with collaborators interested in otter/shark avoidance.
- 902111 - Carbon Flux Ecology
 - Meeting with CenCOOS/planktivore team.
 - Trello board input on clustering tasks
 - Tried to process Hawaii ISIIS video with Biodiversity pipeline with no luck. Need a blob or segment model detector.
 - 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.
- 902306 - SINKER
 - Productive meeting to discuss dashboard with the team. Delivery of initial prototype due in July.
 - Submitted IS request for VM to host dashboard and backend prototype. Discussion with Peter in IS about VM user configuration.
- Overhead
- Out of Office
 - Vacation 5/26-5/30

Week 18

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- 902111 - Carbon Flux Ecology
- 902306 - SINKER
- Overhead
- Out of Office

Week 17

- 901009 - CANON

- 901103 - Biodiversity and Biooptics of Zooplankton
 - Processed four years Ventana/DocR dives with strided Ctenophora sp. A pipeline. Next steps are to cluster and get feedback on performance. .
- 901221 - Midwater Time Series
 - Speed improvements on strided processing pipeline.
 - Processing latest spring experiment i2MAP dive with strided + sdcat clustering pipeline. Discussion with Rob Sherlock on reporting requirements
- 901502 - Ocean Soundscape
 - Hydrophone deployed. This was a major upgrade with a new (refurbished) hydrophone, new recording computer, new node, upgraded tripod, upgraded shore side code and network storage (thalassa). The only thing left untouched was the streaming Shoutcast server. Stream is up and running on Amazon Alexa and shoutcast. Few recording resets are concerning; one due to network timeout and another Windows patches.
 - Team meeting
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Assisted as VO for deployment and ongoing improvements to processing code with the team. [Need to move the master branch to main.](#)
 - Summer intern correspondence
- 902111 - Carbon Flux Ecology
 - Working on performance improvements to sdcat for CFE processing
 - Counsel t
- 902306 - SINKER
- Overhead
 - Vacation 4/28-5/2
- Out of Office

Week 16

- 901009 - CANON
- 901103 - Biodiversity and Biooptics of Zooplankton
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- 902306 - SINKER
- Overhead
- Out of Office

Week 15

- 901009 - CANON
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- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
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- 902306 - SINKER
- Overhead
- Out of Office

Week 14

- 901009 - CANON
- 901103 - Biodiversity and Biooptics of Zooplankton
 - Trained ViTs model with 500+ added Ctenophora sp. A training images mined from video tracking pipeline run on 900+ hours of Haddock dives + remapping of concepts. Balanced accuracy improved from .80 to .88 !!
 - Modified optimized tracking pipeline for strided inference in preparation for running longer time series.
 - Continued exploration on using k8 for scaling.
- 901221 - Midwater Time Series
- 901502 - Ocean Soundscape
 - Worked on prepping the recording machine for hydrophone deployment next Thursday. Many thanks for all the teamwork on this, especially Andrew McCann, Bryan Touryan-Schaefer, and Adriana. Firewall issues resolved and Windows setup for ssh/rsync. Tested file transfer using Microsoft windows subsystem (wsl) from MARS to MBARI which was fast.
 - Migrating code from Bitbucket to Github
 - PBP maintenance
 - Summer intern discussions
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Team discussion on level processing and strategies for full automation that support multiple platforms
 - Attended [Modovolo](#) webinar
 - Simple POC RestAPI for processing from a UI deployed to VM [uav.shore.mbari.org](#)
 - Summer intern discussions
 - Searching for velella velella in recent missing where they were washed up on shore revealed potential groups at sea. Resolution is difficult to confirm.
 - Continued work on ai documentation at <https://docs.mbari.org/internal/ai>
- 902111 - Carbon Flux Ecology
 - Loaded low and high magnification planktivore cluster data into annotation server mantis.
 - Generated new training data for Fernanda
 - Continued work on ai documentation at <https://docs.mbari.org/internal/ai>
 - Added support for reading YAML configuration from URL
- 902306 - SINKER
- Overhead
 - Sick day

- Tech talk on Argo
- Out of Office

Week 13

- 901009 - CANON
- 901103 - Biodiversity and Biooptics of Zooplankton
- 901221 - Midwater Time Series
- 901502 - Ocean Soundscape
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
- 902111 - Carbon Flux Ecology
- 902306 - SINKER
- Overhead
- Out of Office
 - Vacation Tuesday, 3/25

Week 12

- 901009 - CANON
- 901103 - Biodiversity and Biooptics of Zooplankton
 - Evaluating Argo as a way to orchestrate machine learning workflows and updated [ai documentation](#).
- 901221 - Midwater Time Series
 - Processed test i2MAP video with revised algorithm using Buffered IOU and reduced detection IOU to reduce track errors.
 - Evaluating Argo workflow and updated [ai documentation](#)
- 901502 - Ocean Soundscape
 - Evaluated many intern applications and met with team to discuss
 - Migrated data mounts to new application server Thalassa
 - PBP bug fix in soundtrap XML
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Evaluating Argo as a way to orchestrate machine learning workflows
 - Updated UAV [documentation](#)
 - Assisted VO two days drone flights
 - Helping team fully automate processing pipeline from raw + level1/2+ ai
- 902111 - Carbon Flux Ecology
 - Evaluating Argo as a way to orchestrate machine learning workflows
 - Performance improvement with [faster label query by project to mantis](#) so the team can get fast feedback on labeling. Redeployed through an ansible [playbook](#).
 - Training IFCB model for Planktivore clustering/prediction.
- 902306 - SINKER
- Overhead
 - Evaluated many intern applications for automated classification of deep-sea imagery internship and met with Duane to discuss

- IAM account updates
- Minor experimentation with Cursor building simple web app. Cool tool, but I find the whole zen programming idea not very zen.
- Out of Office
 - Vacation Tuesday, 3/25

Week 11

- 901009 - CANON
- 901103 - Biodiversity and Biooptics of Zooplankton
- 901221 - Midwater Time Series
- 901502 - Ocean Soundscape
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
- 902111 - Carbon Flux Ecology
- 902306 - SINKER
- Overhead
- Out of Office
 - Vacation 2/21, 2/28-3/7

Week 10

- 901009 - CANON
- 901103 - Biodiversity and Biooptics of Zooplankton
 - Tator upgrade
 - ARGO Kubernetes sandbox.
- 901221 - Midwater Time Series
 - Tator upgrade
 - ARGO Kubernetes sandbox.
- 901502 - Ocean Soundscape
 - Testing a collaborators approach to scaled processing using PBP+Dask+PyHydrophone. Works! Now we can process 32 days in 4 minutes on gizo.shore.mbari.org. Thanks to Carlos and John for the teamwork, and our collaborator Clea Parcerisas for sharing.
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Tator upgrade
 - ARGO Kubernetes sandbox.
 - Setup justfile recipes and some minor rework of processing scripts to help avoid an error in the post-flight processing. Thanks to Bill Kirkwood for the help.
- 902111 - Carbon Flux Ecology
 - 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.
 - Tator upgrade

- ARGO Kubernetes sandbox.
 - SDCAT cluster mods to merge clusters on Planktivore low/high mag camera
- 902306 - SINKER
- Overhead
- Out of Office
 - Vacation 2/21, 2/28-3/7

Week 9

- 901009 - CANON
- 901103 - Biodiversity and Biooptics of Zooplankton
- 901221 - Midwater Time Series
- 901502 - Ocean Soundscape
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
- 902111 - Carbon Flux Ecology
- 902306 - SINKER
- Overhead
- Out of Office
 - Vacation 2/21, 2/28-3/7

Week 8

- 901009 - CANON
- 901103 - Biodiversity and Biooptics of Zooplankton
- 901221 - Midwater Time Series
 - i2MAP ViTS8 model + Megadetector + Biotrack look pretty good. Some track jitter in siphonophores and cydippids. Going to test with FathomNet Megalodon next.
- 901502 - Ocean Soundscape
 - Fixed [PBP issue for Soundtrap recorders](#)
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - YV11 looks good for general detection but mixed results on large versus small kelp
 - VO for flights
 - Team meeting
 - SOCAR upcoming meeting at NASA Ames with team members on Friday. Will be interesting to hear more about what other groups are doing for image post processing. I cannot attend, but T. O'reilly will give an update.
- 902111 - Carbon Flux Ecology
 - Added support to export ROIs to speed-up ISIIS processing pipeline
- 902306 - SINKER
- Overhead
- Out of Office
 - Vacation 2/21, 2/28-3/7

Week 7

- 901009 - CANON
- 901103 - Biodiversity and Biooptics of Zooplankton
- 901221 - Midwater Time Series
 - Processing single i2MAP video with different models + BioTrack
- 901502 - Ocean Soundscape
 - PBP job agent and Dask execution for speed-up of Soundtrap hydrophones
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Pipeline load, detect, classify working. Need to teach the team how to use.
 - Evaluating YV11 model
- 902111 - Carbon Flux Ecology
 - Fecal pellet subclass and discussion with Fernanda about ROI preprocessing and model comparisons
- 902306 - SINKER
 - Backend prototyping to understand better how to create and populate the SVG. Many thanks to Steve Haddock for sharing his code
- Overhead
 - Planktivore cluster exploration
 - Group meeting to discuss workflow tools
- Out of Office
 - Vacation 2/21, 2/28-3/7

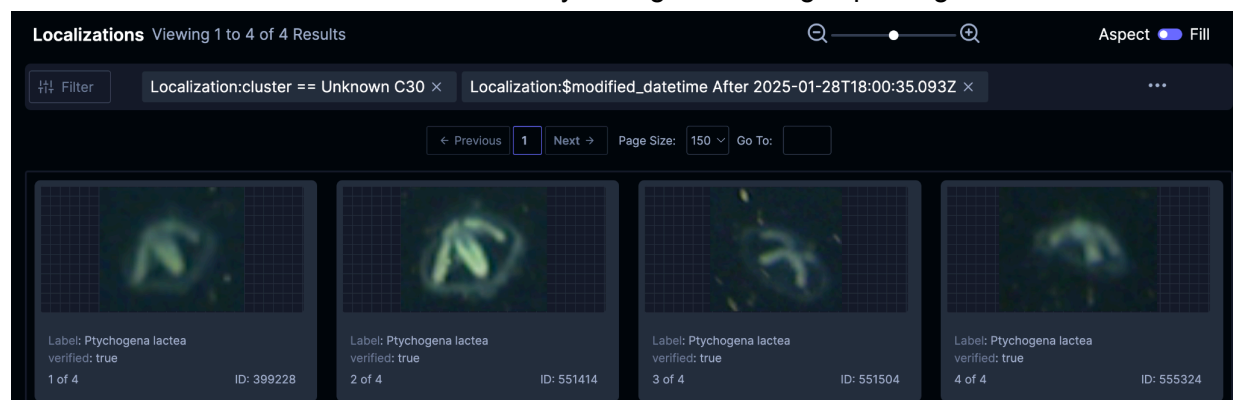
Week 6

- 901009 - CANON
- 901103 - Biodiversity and Biooptics of Zooplankton
 - Retrained M3 ViTS classification model with better focal loss. .90 top-1 balanced accuracy, 647 classes.
- 901221 - Midwater Time Series
 - Nearly complete with improved tracking algorithm changes to [BioTrack](#) code. Combining multiple assignments from Hungarian optimizations is looking very good.
 - ViTS classification model trained with additional R.Sherlock labels. .92 top-1 balanced accuracy, 92 classes. Still some minor label clean-up to do. Rob requested retraining megadetector object detector model with removed nectosomes.
- 901502 - Ocean Soundscape
 - Team meeting and kick-off discussion with LRAUV and OceanSonics about integration of ICListen recorder for near real-time detection/classification+recording. Google model on Kaggle may be a good candidate for this deployment as it uses the EfficientDet model architecture, specifically, efdet0 which is lightweight and should run ok on a NVIDIA Jetson Nano.
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach

- Finished SAM (Segment Anything Model) based corrections of bird localizations
- ViTS classification model trained with improved bird localizations. .98 top-1 balanced accuracy, 27 classes.
- Working on code migration task [#9](#)
- 902111 - Carbon Flux Ecology
 - Downloaded training data set for Fernanda with missing bubbles category
 - Team plans to compare two models Resnet 18 and ViTs on a single ISIIS full mission.
 - Changed Docker build in aidata repo to use `pip install mbari-aidata`
- 902306 - SINKER
 - Team kick-off meeting
 - Discussion with Karen and Carlos Rueda about preliminary prototype ideas
- Overhead
 - Scheduled meeting on plankton labeling. Plan to demo tools I have developed for a number of projects to rapidly annotate images/videos for machine learning.
 - Group meeting
 - Issues with
- Out of Office

Week 5

- 901009 - CANON
- 901103 - Biodiversity and Biooptics of Zooplankton
 - Refactored fastapi-tator. This refactor included some improvements to allow bulk deletion/modifications of video and image annotations.
 - Update docs <https://docs.mbari.org/internal/ai/data/> and <https://docs.mbari.org/internal/ai/>
- 901221 - Midwater Time Series
 - Refactored fastapi-tator
 - Loaded ~30K clustered+classified results from VitS16 model which had better .89 *balanced accuracy* than ViTS8 model of .82 for the 82 concepts(mostly species). Many common species cluster nearly perfectly. Some not in the model have been uncovered, e.g. Ptychogena lactea. Because of domain shift, these look different in i2MAP versus ROV so discovery through clustering is proving useful.



- (mostly) Eucheirella bitumida many poses in a single cluster
- 901502 - Ocean Soundscape
 - Discussion about PBP quality flag enhancements. [Issue #56](#)
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - VO flight volunteer Jan 29th Terrace Point
 - Moving ApacheBeam pipeline from aipeline GitHub repo to uavprocessing BitBucket repo. To simplify install, moved aidata repo to a pip module.
- 902111 - Carbon Flux Ecology
 - Refactoring fastapi-tator
 - Scheduled ISIS review meeting with team
- 902306 - SINKER
 - Kick-off meeting
- Overhead
 - Finished self-assessment for performance review
- Out of Office

Week 4

- 901009 - CANON
- 901103 - Biodiversity and Biooptics of Zooplankton
- 901221 - Midwater Time Series
 - Loaded 200 meter classifications using active learning examples from top-2
 - Working with Rob.S to label confused examples. Current model has top-1 balanced accuracy (a better metric for long-tail distributions) of 0.89.
- 901502 - Ocean Soundscape
 - Modified PBP quality flag notebook to demonstrate compressed .nc with added flag
 - Team meeting
 - Opened GitHub issue on quality flag
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Team meeting
 - Using Meta Segment Anything model (SAM) + SIFT keypoints, cleaned up bird localizations. Worked pretty well, but some manual cleaning still needed for heavy shadows
 - Setup jupyter notebook for teams to use for training on doris as user mldevops
 - uav.shore.mbari.org IS request for GPU for running processing pipeline
 - Retraining ViTS model
 - Synopsis of ML work for Sanctuary report
- 902111 - Carbon Flux Ecology
 - Setup jupyter notebook for teams to use for training on doris as user mldevops
- 902306 - SINKER
 - Discussion with Karen S. about project goals and brainstorming about tools and architecture. Team meeting next week will provide needed requirements
- Overhead
 - Preparing self-assessment

- AWS 2025 touch base and SA intro meeting
 - Conflict of interest form completed
- Out of Office

Week 3

- 901009 - CANON
- 901103 - Biodiversity and Biooptics of Zooplankton
 - Drafting summary of 951 hours video processed through CoTracker3
- 901221 - Midwater Time Series
 - ViTS model training. .89 top-1 balanced accuracy
 - Processed 200 meters with ViTS 8 block model focusing on fish; cluster results look great.
- 901502 - Ocean Soundscape
 - Team meeting
 - Minor work on PBP; add license and doc changes. Reading pbp-agent docs in prep to evaluate feature to merge
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Send Bryan our ML synopsis for sanctuary report
 - Processing and cleaning Dec 2024 missions
 - Ongoing refactoring of FastAPI-tator to simplify revisions for bulk modifications
 - ViTS model training. .86 top-1 balanced accuracy
 - Working on SAM based corrections of some bird localizations
- 902111 - Carbon Flux Ecology
 - Assisting Fernanda with model training and running inference
 - Loaded 5.4 hour ISIIS video
 - Setup jupyter server for model training on doris.shore.mbari.org using two IS maintained GPUs.
- 902306 - SINKER
 - First meeting scheduled for Tuesday next week.
- Overhead
 - Perf feedback training review
 - Group tech talk on authentication and authorization
- Out of Office

Week 2

- 901009 - CANON
- 901103 - Biodiversity and Biooptics of Zooplankton
- 901221 - Midwater Time Series
- 901502 - Ocean Soundscape
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
- 902111 - Carbon Flux Ecology
- Overhead
- Out of Office

Week 1

- 901009 - CANON
- 901103 - Biodiversity and Biooptics of Zooplankton
- 901221 - Midwater Time Series
- 901502 - Ocean Soundscape
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
- 902111 - Carbon Flux Ecology
- 902306 - SINKER
- Overhead
- Out of Office
 - Dec 22 - Jan 2: Vacation