

Danelle Cline Sorted By Project

500055 - VARS, M3/RS, DSG

- Added support for adjustable disk allocation and longer timeouts to handle processing master video with larger YOLOv5 1280 models (Week 10)
- Added ec2shutdown command to support clean shutdown of elastic clusters (Week 19)
- Closed clustering tasks; Kevin has addressed. Thanks, Kevin! (Week 23)

500055 - VARS, M3/RS, DSG.

- Debugging SSO account issues. Minor assistance on training activity. (Week 7)

901009 - CANON

901103 - Biodiversity and Biooptics of Zooplankton

- DINOv2 and DINO cluster experiments in AWS are nearly complete. (Week 1)
- Beginnings of core ai docs (Week 7)
- Working on REDIS workflow for automated processing (Week 9)
- Working on REDIS workflow for automated data loading (Week 10)
- Working on optimizing FastAPI for bulk changes (Week 19)
- Performance improvements to CDK design to add elastic GPU YOLOv5 scaling (Week 23)
- Ansible deployment of REDIS fastapi-vss service to doris (Week 35)
- Working on apache-beam aipipelines for video (Week 35)
- Updated ai documentation (Week 35)
- Discussion with team about project review feedback. (Week 38)
- Processed all Ventana 2020 dives; reviewed 2020 test results with the team. (Week 42)
- Next steps are to run the most recent Haddock dive, 4581, with a modified pipeline to include more concepts, saliency-filtered exemplars, and no confidence filtering. (Week 42)
- Testing Meta Co-Tracker on midwater video (Week 44)
- Added cleanvision to exemplar pipeline. Many examples were removed. (Week 44)
- Finishing up BioTrack - a tracker suitable for tracking time-lapse or full-frame video based on points & text descriptions. Uses Meta Co-Tracker3 and BioClip models. (Week 46)
- BioTrack tracker development adding in multiple key points to improve tracking of siphonophores (Week 48)
- Processed dive 4432 to explore biodiversity. (Week 48)
- Discussion with the team about next steps: supervised, semi-supervised, etc. pipeline (Week 48)

901502 - Ocean Soundscape

- Working on PBP plotting bug fixes with team (Week 31)
- Travel plans for upcoming SoundCoop workshop (Week 31)
- Discussion with EarthSpecies team about audio-to-audio search and model training collaboration (Week 31)
- Hosted weekly group meeting (John on vacation) (Week 31)
- PBP upgrades to pbp-meta-gen code (Week 35)
- Travel planning for upcoming workshop (Week 35)
- Preparing blue whale data for sharing as a HuggingFace dataset (Week 38)
- Working with the team on materials for the upcoming SoundCOOP workshop to present PBP/PyPAM notebooks. This is a small hybrid conference with NOAA to discuss tools and methods for creating sound standards. They are interested in our work on cloud and scaling. (Week 38)
- Tested the just-released Google MultiSpecies model on blue whale A calls (performance not great, top-3 looking decent)
<https://www.kaggle.com/models/google/multispecies-whale> (Week 38)
- Discussion on Kaggle Google multi-species model results and OpenAI Whisper model; latter may prove more useful for general soundscape analysis. (Week 42)
- Submitted request for computer replacement for MARS lab soundscape machine with RAID as it has reached the end of life (Week 44)
- PyPAM/PBP meeting with collaborators to discuss expanding its use with different hydrophones using the pyhydrophone python package (Week 44)
- Recording computer on order (Week 46)
- Discussion on Whisper model ML exploration and next steps with the team. Did you know that a humpback song transcript starts with Thank You, Thank You? (Week 48)
- Meeting with NOAA contractor to discuss PBP pull request for a workflow agent (Week 48)
- Sadly, the new hydrophone is silent due to power issues on the MARS replacement node. The livestream was up for about a day. IS is preparing a new recording computer as planned. (Week 48)

901502 - Passive Acoustic Sensing

- Meeting with model developers with the Earth Species Project to discuss collaboration and use of their BioLingual model - a model based on contrastive language-audio pretraining on a million audio caption pairs that can identify over a thousand species. (Week 1)
- A quick prototype for FLAC file metadata extraction in same fashion as our .WAV files looks good. Should be able to quickly parse FLAC audio hosted in GCP. Talks on handling data in GCP are planned in January with the broader community. (Week 1)
- Adding audio metadata extraction to PBP. Iclisten, Soundtrap working from S3, next is HRS from GCP. (Week 7)
- Setup Open Data sync for raw 2024 data. Added to ansible playbook (Week 7)
- Beginnings of core ai docs (Week 7)

- Finished PBP audio metadata extraction. Pending review of PR. (Week 9)
- Minor corrections needed for PR (Week 10)
- Upcoming discussion on Google summer of code project (Week 10)
- Working on PBP time metadata feature improvements (Week 19)
- Working on PBP time metadata feature improvements (Week 23)
- Summer intern intro and project counsel (Week 23)
- Working on adding PBP time coverage plot (Week 29)
- Summer intern cloud assistance (Week 29)
- Team meeting (Week 29)
- Brainstorming on PBP roadmap with PBP team (Week 29)

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

- We have bird clusters for our team to validate. Do you see the mola among the birds? (Week 1)
- (Week 1)
- Lots of activity on OSM e-poster and lightning talk preparations. (Week 7)
- Assisted with two flights. (Week 7)
- Cleaning up sdcat code for open source release. (Week 7)
- OSM e-poster presentation. Minor changes to SDCAT. (Week 9)
- Working on REDIS workflow for automated data loading (Week 10)
- Expense report for OSM (Week 10)
- 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 10)
- Project update presentation (Week 19)
- Working ML whitepaper draft/proposal abstract input (Week 19)
- 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 19)
- 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 23)
- Finishing up detection, clustering and visual search inference pipeline design (Week 29)
- Loaded backlogged mission images to mantis and populating vss database (Week 29)
- Evaluating per class performance metrics (Week 29)
- Adding in performance metrics to pipeline and refactoring for apache beam implementation (Week 31)
- Per class performance metrics are top-3 accuracy .983, top-3 accuracy .947. Good class separation. (Week 31)
- (Week 31)

- Fixed bugs in small cluster edge cases and added batch inference for performance boost (Week 31)
- Team meeting with presentation on progress (Week 35)
- Ansible deployment of REDIS fastapi-vss services to doris (Week 35)
- Loaded recent deployment images to mantis (Week 35)
- Refining metric graphs and scores for cross model comparisons (Week 35)
- Working on apache-beam aipipelines for images (Week 35)
- Updated ai documentation (Week 35)
- Labeling mission with batrays for inclusion in our vss library (Week 38)
- Fixed some issues in the augmentation features of the aidata tool (Week 38)
- Evaluating Argo Workflows as a way to orchestrate integrated machine learning workflows in mantis (Week 38)
- 5th Marine Imaging Workshop in Monterey poster presentation and 1-minute lightning talk (Week 42)
- Testing new one-class detector model (Week 42)
- Board update slides (Week 42)
- Added cleanvision to exemplar pipeline to remove dark and blurry examples. Very few were removed. (Week 44)
- 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. (Week 44)
- 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 44)
- Annotating processed missions (Week 46)
- Processing and cleaning missions with improved ViTS model. Surprisingly, the model worked in a zero-shot manner, predicting an unseen jelly. (Week 48)
- Added in some needed FastAPI endpoints for bulk data deletion (Week 48)

902111 - Carbon Flux Ecology

- Some minor work familiarizing with the ISIIS instrument output .avi files. The AVI format has problems with a missing image index but exports ok to frame for processing. (Week 1)
- Tested the ISIIS instrument frame captures with sdcat which is doing a great job clustering. Beginnings of core ai docs. (Week 7)
- Assisting Fernanda with SDCAT questions and debugging in Colab (Week 10)
- Working on REDIS workflow for automated data loading (Week 10)
- Working on optimizing FastAPI for bulk changes (Week 19)
- Evaluating ARGO + Kubernetes integrated ML workflow (Week 19)
- Finished optimizing FastAPI for bulk changes (Week 23)
- Project proposal input (Week 23)
- Proposal input (Week 26)
- Finishing up detection, clustering and visual search inference pipeline design in preparation for processing ISIIS data (Week 29)

- Adding in performance metrics to pipeline and refactoring for apache beam implementation (Week 31)
- Fixed bugs in small cluster edge cases and added batch inference for performance boost (Week 31)
- Fernanda has loaded 1000 ISIIS images with 20000 particles; expect to start labeling soon. Sneak peek at a few detections with high saliency (Week 31)
- (Week 31)
- Working on apache-beam aipipelines for images (Week 35)
- Updated ai documentation (Week 35)
- Initial training labels are being tested with ResNet18 model. Next steps are to mine for rare examples to balance the training data using vss. (Week 38)
- Evaluating Argo Workflows as a way to orchestrate integrated machine learning workflows in mantis (Week 38)
- Created query script to mine to class imbalanced ISIIS data (Week 42)
- Paper review of X-CLR (graph-based contrastive learning) and PAWS for self-supervised methods with Fernanda (Week 44)
- Downloaded ISIIS data for testing (Week 44)
- In collaboration with Fernanda, sandbox development of contrastive plankton model for inspired by X-Sample Contrastive Loss Meta FAIR paper (Week 46)
- Improvements to ViTS training code and generate latest training data with augmentations for Fernanda to train (Week 48)

902204 - Scalable Robotics

- Working on sightwire pipeline for stereo data ingest and visualization. (Week 1)
- Working on sightwire watchdog pipeline for stereo data ingest with simulated video stream. Evaluating redis timeseries. (Week 7)
- Finished sightwire watchdog pipeline for stereo data ingest with simulated video stream using REDIS timeseries. (Week 9)
- Sprint kick-off. Preparing for test-tank stereo capture using sightwire (Week 19)
- Loaded sdcat generated output and documented steps for dial integration (Week 19)

902403 - Expedition DB Modern

Out of Office

- OSM Conference, Feb 19-23, New Orleans, MS
- Vacation Feb 26
- Leave Feb 28-29 care for son following surgery
- Leave Feb 29, March 1/ care for son following surgery
- Medical leave March 18-April 22
- Vacation June 5-19
- Vacation June 5-20
- Vacation July 26th
- Oct 7-10 - 5th Marine Imaging Workshop in Monterey

- September 24/25 NOAA SoundCoop workshop Boulder, CO
- Oct 8-11 - 5th Marine Imaging Workshop in Monterey

Overhead

- Reviewed Tarun Sharma (2023 summer intern) CVPR paper. (Week 9)
- IE group meeting (Week 19)
- DOEST materials (Week 23)
- Gave an invited Zoom talk to an enthusiastic summer camp of STEM achievers at a program hosted by Mercy College. So many questions from this group of young explorers. It was a ton of fun. (Week 29)
- Follow-up with D.Edgington on planktivore meeting (Week 31)
- Presented video processing at AWS Non-profit Summit, San Diego, CA (Week 42)
- Emails between video lab team/HR/group lead in preparation for a safe upcoming discussion on i2MAP labeling on October 24th. (Week 42)
- Submitted help ticket for replacement computer ADA; she will be replaced with FEIFEI in honor of Fei-Fei Li. (Week 44)
- i2MAP meeting (Week 44)
- Export 26K images with 100K localizations for YOLOv11 single-class detector i2MAP exploration with video lab (Week 44)
- Set up new DELL 42.5" monitor with IS help. This consolidated three monitors into one for a more streamlined (and power-efficient) office. (Week 46)
- New MAC laptop feifei is in progress with IS. (Week 46)
- FathomNet correspondence about portal use which will likely need to bump to 2025 (Week 46)
- Setting up new laptop FEIFEI (Week 48)