

Duane Edgington Sorted By Project

500055 - VARS, M3/RS, DSG

- AWS work on AWS secrets manager, cost explorer (Week 2)
- Meeting scheduled for Thursday Jan 12 with Ted Zamborsky and an AWS EFS specialist regarding our EFS daily charges and use with SageMaker Studio and other AWS services. (Week 2)
- Met with Timothy Ryter, AWS Storage Specialist, along with Emmett and Ted, regarding EFS storage volume and SageMaker Studio. Timothy provided guidance on how to examine an EFS volume, and how to potentially reduce lifecycle costs. Timothy and Ted are going to check with the SageMaker Studio team to ensure Timothy's advice is sound, and then inform me of that team's guidance. (Week 3)
- Working on deepsea-ai documentation. Our task is to meld in vaa-docs to form one up-to-date documentation repo. (Week 4)
- Monitored Lonny's Paull dive series run on AWS. ECS runs were successful, over several days. (Week 5)
- Removed Lonny's SageMaker Studio App per his approval. (Week 5)
- Some work/discussion on VAA deepsea-ai documentation. Ran test of documented processing flow on AWS ECS. (Week 6)
- Continued exploration of the EFS file system attached to SageMaker Studio issue. Will be pursuing suggestions received from AWS Support Feb 15. (Week 7)
- IS says "no problem upgrading from MacOS Monterey 12.6.3 to MacOS Ventura 13.2.1" Wish me luck... (Week 8)
- Continued work drilling into AWS SageMaker Studio EFS volume maintenance. Some progress, but more to do. (Week 8)
- Explored why some videos from dive D1377 did not load in Lonny's giant January AWS ECS submission. By carefully examining the AWS cloudwatch logs I determined that the missing videos were not successfully uploaded to AWS S3. We don't know if that was due to a titan issue, or networking issue, or other. Issue posted to github to improve feedback/logging of video submissions and processing status in deepsea-ai portal. (Week 11)
- Ran a job with Danelle to resubmit dive D1377 and monitor successful completion and loading of missing video data into deepsea-ai. So far so good. It should be completed by the end of March 15. (Week 11)
- Met with project manager NancyJ to go over my roles and responsibilities on project 2023. Added to biweekly project team meetings. (Week 24)
- Team meeting, proposal process. (Week 26)
- Proposal work. Reviewing documentation on model training. (Week 27)
- Proposal work (Week 28)
- Team meetings (Week 28)
- Preparation for the next meeting August 23. Reviewing action items; preparation for the next round of model training and dive inference. (Week 33)
- Working on fix for issue renewing training from checkpoint (device out of space error) (Week 33)
- Working on VARS-ML pipeline worksheet action items and testing (Week 34)
- Testing/debug updates to deepsea-ai process command (Week 35)
- Team meeting Aug 30 (Week 35)
- Continued work on VARS-ML-SE-tasks action items, and testing (Week 36)
- Team meeting Aug 30 (Week 36)
- Continued testing of enhancements to deepsea-ai (Week 37)
- Continued testing deepsea-ai process and ecsprocess ml inference updates. (Week 38)
- Worked on tasks as assigned VARS-ML-SE-tasks (Week 38)
- Continued work on VARS-ML-SE tasks. Finished testing of flags/parameters AWS. With Danelle, testing of docker service on Olivia local machine. (Week 39)

- Continued work on VARS-ML-SE tasks. Finished testing of flags/parameters AWS. Finished testing of handling/logging upload failure from M3 (network hiccup). With Danelle, finished testing of docker cuda service on Olivia local machine. (Week 40)
- With IS, brought workstation Maximilian up for cuda/ML work, deployed to Brian S. office, with 10G ethernet networking. Nvidia RTX A4000 GPU with cuda/pytorch/docker/AWS stack. (Week 40)
- MBARI VM doris being brought up for deepsea-ai (dsai) AWS job launching. (Week 40)
- Continued work on VARS-ML-SE tasks. Working on deepsea-ai docker service on Doris VM. Testing on digits dev box. (Week 41)
- Continued work on VARS-ML-SE-tasks, focused on preparing VM DORIS as host for launching deepsea-ai commands (including ecsprocess) (Week 43)
- Development and testing of deepsea-ai docker image on VM DORIS continues. Testing with production-level dive video Ventana 2023. Issues being worked on. (Week 44)
- MBARI GPU meeting Nov 1 with IS team. (Week 44)
- Continued testing/tuning production system on DORIS for launching/monitoring AWS inference jobs. 3 recent dives identified by Lonny have been processed, now to completion. Working through CDK stack behavior tuning. (Week 45)
- Team meeting (Week 45)
- Completed assigned tasks on VARS-ML-Tasklist including production runs on VM DORIS to shake out bugs and deliver processed video files to Lonny. (Week 46)
- Working session with Danelle to refactor directories on Doris to make it easy for different projects to keep their work and products separate on DORIS. Updating documentation. (Week 46)
- Team meeting (Week 50)
- Reported on VARS-ML-SE tasks (Week 50)
- Discussed task assignment with project manager (Week 50)
- Updated team at last VL meeting (Week 51)

901009 - CANON

- Kickoff meeting Thursday Jan 19. (Week 3)
- Reviewed 2023 project kickoff slides (Week 4)
- No meeting this week. (Week 5)
- Team meeting Feb 9 (Week 6)
- Attended team meeting (zoom) and reviewed campaign plan presentation materials. (Week 7)
- Team meeting April 6. (Week 15)
- Team meeting April 20 (Week 16)
- Team meeting April 20 (Week 17)
- Team meeting May 4 (Week 18)
- Team meeting May 11, May 18 (Week 20)
- Read 2024 proposal (Week 28)

901103 - Biodiversity and Biooptics of Zooplankton

- Project planning work with Danelle and Kevin B. (Week 2)
- We are researching and implementing AWS Secrets Manager solution for passing keys to deepsea-ai database (Week 3)
- Looking into yolov8 documentation, multi-gpu training, etc. (Week 4)
- Reading papers on active learning strategies. (Week 6)
- Working session with Danelle. Installed VARS system on my M1 workstation. Brian/Lonny tells me I need to be updated to MacOS Ventura (13.2.1) for recent VARS video viewers/localization viewers to work. IS has set up my system at MacOS Monterey (12.6.3). I will check with IS if that upgrade will cause issues. (Week 7)
- Brian has a patch, for me to try: VARS Annotation-1.4.8.zip (Week 7)
- Continuing research on Active Learning for object detection/classification. (Week 7)

- Project meeting with Danelle to discuss workflow (Week 8)
- Continuing exploration of Active Learning for Object Detection (Week 8)
- FathomNet workshop Feb 22-23 (Week 8)
- Summer intern candidates selected. Offer extended to one candidate. (Week 10)
- Exploring candidate tools/methods for active learning support (Week 10)
- Continued exploration of tools to facilitate active learning for creation of midwater image training library. (Week 11)
- Working session with Danelle April 11. (Week 15)
- Exploring human in the loop active learning tools (Week 15)
- Experiments in progress on “top 20” midwater concepts (Week 15)
- Continued work with Danelle on Active Learning tool and framework (Week 16)
- Continued work with Danelle on active learning tools for midwater images and concepts (Week 17)
- Continued work with Danelle on active learning tools for midwater images and concepts (Week 18)
- Continued work with Danelle on active learning tools for midwater images and concepts (Week 19)
- Continued work with Danelle on clustering and active learning tools for midwater images and concepts (Week 20)
- Continued work with Danelle on clustering and active learning tools for midwater images and concepts (Week 21)
- Arranged office space for incoming intern Tarun Sharma June 5 to Aug 11. (Week 21)
- Setting up Vision Transformer for Small-Size Datasets for training against midwater images. Successfully trained against CIFAR-100 as a test run. (Week 21)
- Setting up AWS sagemaker studio for 901103 work. (Week 21)
- Continued work with Danelle on clustering and active learning tools for midwater images and concepts (Week 22)
- Arranged office space & Ubuntu workstation for incoming intern Tarun Sharma June 5 - Aug 11. (Week 22)
- Setting up Vision Transformer for Small-Size Datasets for training against midwater images. Successfully trained against CIFAR-100 as a test run on AWS SageMaker Studio. (Week 22)
- Set up AWS sagemaker studio for 901103 work. (Week 22)
- Continued work with Danelle on clustering and active learning tools for midwater images and concepts (Week 23)
- Welcome intern Tarun Sharma June 5 - Aug 11, who will be working on semi-supervised learning applied to midwater video (learning classes using few labels). (Week 23)
- Running Vision Transformer for Small-Size Datasets for training against midwater images. Successfully trained against CIFAR-100 as a test run on AWS SageMaker Studio. Uploaded trained model to huggingface (Week 23)
- Running colab and AWS sagemaker studio for 901103 work. (Week 23)
- IS upgraded gpu box OLIVIA to Ubuntu 22.04 LTS with cuda drivers from Lambda Stack. (Week 23)
- Continued work with Danelle on clustering and active learning tools for midwater images and concepts (Week 24)
- Sessions with intern Tarun Sharma, who will be working on semi-supervised learning applied to midwater video (learning classes using few labels). (Week 24)
- Running Vision Transformer for Small-Size Datasets for training against midwater images. Debugging with Danelle midwater image dataset conversion to CIFAR100 format. (Week 24)
- Running colab and AWS sagemaker studio for 901103 work. (Week 24)
- Tests on gpu box OLIVIA to Ubuntu 22.04 LTS with cuda drivers from Lambda Stack. Working fine for accelerated pytorch; debugging accelerated tensorflow. (Week 24)
- Work continues. Proposal process. (Week 26)
- Proposal work. Reading up on SOTA trackers and detectors. (Week 27)
- Proposal work. (Week 28)
- Continuing work on detectors/trackers. Starting to train models for several detectors to compare/contrast including yolov8 and Vit (Week 29)
- Building tracking model against i2MAP localizations (Week 30)

- Intern Tarun Sharma wrapping up a very productive summer of exploration of semi-supervised / self-supervised model exploration against midwater image datasets (Week 30)
- Trained YOLOv5/StrongSORT i2MAP model with 70 classes, 11,201 images, and 80,156 localizations as curated by Danelle. Evaluating now. Ran inference on several videos (i2MAP dives and a Ventana dive) to review performance. Also trained "ROI" model where the 70 classes were collapsed to one class (region of interest) to compare with intern Tarun's Megadetector, and to compare with the 70 class model. (Week 31)
- Wrapping up summer internship Tarun Sharma (Week 32)
- Prepared collaborator agreement with Tarun Sharma (Caltech Ph.D. Student, who just finished summer 2023 MBARI internship). (Week 33)
- Code walkthrough with Tarun (Week 33)
- Reviewing work plan and next steps (Week 33)
- Discussions with Steve Haddock and Danelle on MT proposal feedback (Week 34)
- Preparation for training a model (Week 36)
- Testing scripts after code refactor (Week 36)
- Trained a YOLOv5x6 1280 model on selected images for targeted detection/classification, using deepsea-ai and bio-ai workflows. Validation statistics are very promising. (Week 46)
- Running model against selected dive video collection (24 videos) to evaluate performance and usefulness. Using VM DORIS and deepsea-ai PROCESS pipeline. (Week 46)
- Requested quota increase of AWS g4dn EC2 instances, to support running model on ECS elastic compute stack via deepsea-ai ECSPROCESS pipeline (Week 46)
- Evaluating YOLOv5x6 model, 1280 image size, trained with Ctenophora images. (Week 47)
- Training updated YOLOv5x6 model for Ctenophora sp. A detections in ROV video based upon confusion input from S. Haddock. (Week 51)
- Running test inference on V4318 video (Week 51)

901502 - Passive Acoustic Sensing

- Team meeting Wednesday Jan 18. (Week 3)
- Team meeting Jan 18, 19 (Week 4)
- Shoutcast / Alexa Skill monitoring. Live stream is down. (Week 5)
- Team meeting Feb 1. (Week 5)
- Alexa Skill streaming of live stream is back up upon restoration of shoutcast streaming (Week 6)
- Biweekly team meeting. Met with John Ryan to discuss AWS storage products and ideas for PyPam processing of historical data on AWS. (Week 6)
- Alexa MBARI Ocean Soundscapes: Verified live streaming restored after IS system patching and needed reboot (Week 7)
- Attended AWS Alexa Skill Quality Coach webinar (Week 8)
- Team meeting (Week 10)
- Team meeting. To participate in AWS cost analysis with Carlos and Danelle on recent PyPam runs for presentation Friday. (Week 11)
- Assisted Danelle, Carlos with their PyPam evaluation AWS run with Cost Explorer reports from the days of their runs. (Week 12)
- Team meeting April 26 (Week 17)
- Team meeting April 26 (Week 18)
- Team meeting May 10 (Week 19)
- Team meeting June 7. (Week 23)
- Team meeting, proposal process. (Week 26)
- Proposal work. Reading up on Orca sound classification. (Week 27)
- Proposal work (Week 28)
- Team meeting (Week 29)
- Proposal response discussions. (Week 35)
- Reviewing Alexa status (Week 35)

- Meet with Scott Viers of Orcasound, along with rest of 901502 team, Monday Sept 11 (Week 36)
- Alexa monitoring (Week 38)
- Meeting on prep for Oct demonstration Sept 29. (Week 40)
- Team meeting. (Week 45)

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

- Project meeting planned for next week (Week 8)
- Working session with Danelle to bring up YOLOS and SAHI on AWS SageMaker Studio, and to pump aerial images to S3 bucket. (Week 10)
- Team meeting. (Week 10)
- Continued exploration of tools for detection. (Week 11)
- Quick research on AI infill tools to mask (erase) overly salient objects (Week 16)
- Team meeting April 26 (Week 17)
- Continued work with Danelle on active learning tools for UAV images and concepts (Week 18)
- Team meeting May 3 (Week 18)
- Collaborator meeting planned May 8 (Week 18)
- Continued work with Danelle on active learning tools for UAV images and concepts (Week 19)
- Collaborator meeting May 8 (Week 19)
- Team Meeting May 10 (Week 19)
- Continued work with Danelle on unsupervised clustering and active learning tools for UAV images and concepts (Week 20)
- Team meeting May 18 (Week 20)
- Team meeting May 31. (Week 22)
- Team meeting, proposal process. (Week 26)
- Proposal work. (Week 27)
- Proposal work (Week 28)
- Team meeting (Week 28)
- Team meeting (Week 29)
- Team meeting (Week 33)
- Proposal response discussions (Week 35)
- Team is submitting an abstract to OSM 2024. (Week 37)
- Team meeting. (Week 40)
- Team meeting (Week 43)
- Team meeting. Planning training session to team on clustering/labeling toolset. (Week 45)
- Team meeting. Planning team training session on data management system for ML. (Week 46)
- Training session on 901102-uavs labeling Dec 5, 2023. Following up on action items. Planning follow-up team training session and labeling work. (Week 49)
- Continued work on sdcat and labeling localizations in preparation for training a model (Week 50)
- Setting up amazon account for model training (Week 50)
- Working on tasks preparing to train the first model and run inference on the very large images. (Week 50)
- Abstract preparation for EGU 2024 (Due Jan 10 2024) (Week 50)
- Continued work on labeling (Week 51)
- Refined augmentation module using Albumentations library for training image augmentation. (Week 51)
- Preparing for SAHI image slicing for inference on the very large pixel count 7952x5304 UAVS images. (Week 51)
- Participated in coordinated sampling missions Dec 14. (see Tom O'Reilly below) (Week 51)

902004 - Planktivore

- Meeting postponed (Week 5)

- Weekly engineering meetings started Feb 8 2023. First team goal is ECOHAB deployment on LRAUV in April. (Week 6)
- Stakeholder meeting planned for Feb 14. (Week 6)
- Reviewed kickoff presentation materials. (Week 7)
- Team meeting Feb 22. (Week 8)
- Weekly meeting (Week 10)
- Team meeting (Week 11)
- Proposal work (Week 28)
- Proposal response discussions (Week 35)
- Data handling and model building discussion. (Week 45)

Out of Office

- Plan remote work from home Feb 15 - 16.
- Power outage March 10 - 11.
- Vacation: March 21 - 31. Back in office April 3.
- Vacation: March 21 - 29. Sick leave March 30 - April 5.
- Working from home while recovering from sick leave
- Vacation Friday April 28
- [CVPR 2023](#) June 14 - 22.
- Virtual [CVPR 2023](#) June 18 - 22.
- July 23-July 29 2023. ICML (virtual). HST (UTC-10)
- Oct 16-18 2023. Pytorch conference. SFO (in person). PDT (UTC-7)
- July 23-July 29 2023. ICML (virtual). HST (UTC-10) Semi-supervised learning representations tutorial.
- AWS summit July 26 (virtual)
- Oct 11-13 2023. virtual conference on Generative AI. PDT (UTC-7)
- Oct 11-13 2023. [virtual conference on Generative AI](#). EDT (UTC-4)
- Nov 15: (virtual) Generative AI (AI World Barcelona) 5pm-9pm (GMT +2)
- Nov 20 - 22: Vacation (PST) UTC-8
- Nov 27 - Dec 1: Vacation (EST) UTC-5
- Nov 29 Potential video conf with Tom Uram from Argonne National Labs
- Dec 10 - 16. NeurIPS 2023. (virtual) UTC-6
- Nov 21 - 22: Vacation (PST) UTC-8
- Dec 21 - Jan 5 Holidays vacation

Overhead

- Engineering meeting Tues (Week 1)
- Group meeting Weds (Week 1)
- Training. Continuing AWS Coursera course. (Week 1)
- Researching AWS secrets manager, security token service, and key management service for database access secrets management (Week 1)
- Finished first module of Coursera AWS certification. Started on #2 (Security) (Week 2)
- Performance feedback (Week 3)
- Continuing Coursera AWS Security course. (Week 4)
- Attended webinar "Efficient AI for Wildlife Conservation", Professor Sara Beery (Week 5)
- Continued work exploring EFS on AWS. Trying to attach to an EC2 instance. (Week 5)
- (Week 5)
- Performance discussion. 2023 plans. (Week 6)
- Peer Review of paper for Frontiers in Marine Science (Week 6)
- Group meeting (Week 10)
- Enabled Lonny to be able to run AWS Cost Explorer for him to monitor costs for video lab work. (Week 11)

- Campaign to slash EFS daily charges (related to SageMaker Studio EFS volume) was successful. Backed up work to sync'd S3 bucket, including glacier store. (Week 11)
- Quarterly check-in meeting (Week 16)
- Reviewed AWS Cost Explorer with Lonny so he can explore 500055 charges. (Week 16)
- Teleconference with upcoming intern Tarun Sharma (Week 16)
- Some proposal-process work outside current projects. (Week 26)
- Proposal work 902111, others (Week 28)
- Working with project leads on MT phase 1 feedback to 2024 proposals. (Week 34)
- Minor AWS work for 902204 (Week 35)
- Proposal response discussions 902111 (Week 35)
- DEI seminars (Week 35)
- Preparation for virtual conference on Generative AI (Week 37)
- Follow-up on generative AI workshop and Pytorch Conference. (Week 43)
- (Week 43)
- Attended Colleen's lab meeting, with a presentation from ML postdoc. (Week 46)
- TBD Potential video conf with Tom Uram from Argonne National Labs (Week 47)
- Telecon with Tom Uram of Argonne regarding their GPU enabled supercomputer systems, and process for accessing them for scientific workflows. Very exciting possibility for collaboration. (Week 49)