

Duane Edgington

Week 30

- 901103 - Biodiversity and Biooptics of Zooplankton
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Sarah Williams is making great progress, now working in Colab and on DGX Spark-0626 training models and validating performance. Pushing on a July 31 deadline for paper to be presented at ECCV workshop (as a poster).
 - Tim is working on paper for presentation at IEEE Oceans Conference 2026.
 - Working on debugging problems with RFDETR inference pipeline involving SAHI and ONNX model. Lots of moving parts to get pytorch -> ONNX -> SAHI all working together properly.
- 901502 - Ocean Soundscape
 - Great progress on Perch2.0 model & perch-hoplite agile modeling. Current model has detected orcas high confidence, now verified in custom Gradio annotation tool, on 5 different days in 2 different months. Cross correlated with sightings reported by whale watching cruises in the bay (Californian CA140s "Emma's" Bigg's pod preying on gray whale pups). Next step is to work on humpback/gray whale verification/annotation, then train a next generation model. Current model orca F1 score ~0.95 at threshold ≥ 1.16 (logit)
- Overhead
- Out of Office
 - September 8-13 ECCV conference. Present UAVS Yolo26/RFDETR model performance. Have reservations.
 - September 21-24 IEEE Oceans Conference, Monterey. Present Perch-hoplite poster.
 - October 19-24 Pytorch Conference, San Jose. Present Perch2.0 port to pytorch poster. Registered.

Week 29

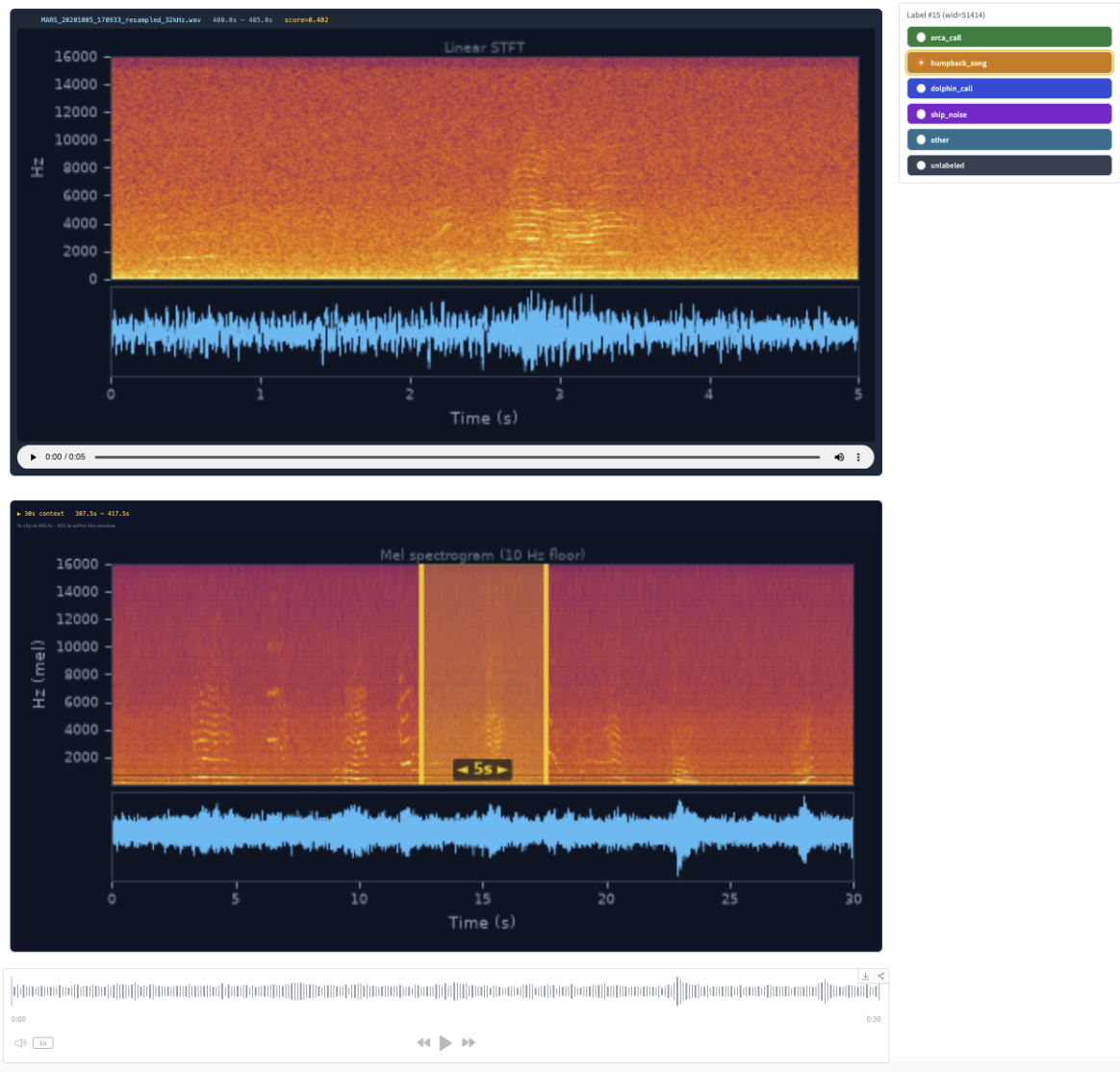
- 901103 - Biodiversity and Biooptics of Zooplankton
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Team meeting with Intern Sarah Williams. Some work on infrastructure to support her model training.
 - Touched base with Tim Sananikone. He is working on a paper for the IEEE Oceans Conference. Danelle and I will review in a week or two.
- 901502 - Ocean Soundscape

- Submitted poster proposal to Pytorch 2026 conference (October, San Jose). *"Perch 2.0 and Perch-Hoplite in Pure PyTorch: An End-to-End TensorFlow-Free Bioacoustics Pipeline"*
- Present progress, status, and next steps to the Soundscape team July 15.
- Good progress on analyzing results and ideas to address linear model's classification confusion.
- Overhead
- Out of Office
 - September 8-13 ECCV conference. Present UAVS Yolo26/RFDETR model comparison.
 - September 21-24 IEEE Oceans Conference, Monterey. Present Perch-hoplite poster.
 - October 19-24 Pytorch Conference, San Jose. Present Perch2.0 port to pytorch poster.

Week 28

- 901103 - Biodiversity and Biooptics of Zooplankton
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Sara Williams continues to make great strides in training models and running inference. Meetings and sharing of code. Set up so she can run on NVIDIA DGX Spark if she needs to for long training runs.
- 901502 - Ocean Soundscape
 - Great progress in perch2 model and perch-hoplite framework project. Over the 4th holiday I ported perch2 from tensorflow to pure pytorch so I could run native (and fast) on my NVIDIA DGX Spark systems. Great joy. Hard tedious work, but very successful. I hope to present at the Pytorch conference as a poster in October.
 - Using "my" perch2 model and perch-hoplite agile modeling system (also ported to pure pytorch and python, no tensorflow), harvesting 5 second annotations of different sound sources, hunting for orcas. Getting great separation of different sounds within the perch2 embeddings
 - Enhanced Gradio audio custom annotation tool to show a 30 second context window for each 5 second audio clip to be annotated, which is critical in annotating humpback calls (which go on and on) where a 5 second clip is easily confused with other species. Motivated by John's comments while using my Gradio tool to annotate humpbacks (which I did

not recognize, then).



- Overhead
- Out of Office
 - September 8-13 ECCV conference. Present UAVS Yolo26/RFDETR model comparison.
 - September 21-24 IEEE Oceans Conference, Monterey. Present Perch-hoplite poster.
 - October 19-24 Pytorch Conference, San Jose. Present Perch2.0 port to pytorch poster.

Week 27

- 901103 - Biodiversity and Biooptics of Zooplankton
- 901502 - Ocean Soundscape
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach

- Overhead
- Out of Office
 - June 10 Medical appointment
 - June 15, 17. 19 Medical Appointment
 - September 21-24 IEEE Oceans Conference Monterey

Week 26

- 901103 - Biodiversity and Biooptics of Zooplankton
- 901502 - Ocean Soundscape
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
- Overhead
- Out of Office
 - June 10 Medical appointment
 - June 15, 17. 19 Medical Appointment
 - September 21-24 IEEE Oceans Conference Monterey

Week 25

- 901103 - Biodiversity and Biooptics of Zooplankton
- 901502 - Ocean Soundscape
 - Proposal work
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Team meeting
 - Team discussion on yolo26 and RF-DETR trading and inference strategy. Discussed testset. Discussed ONNX
 - Discussed SAHI and image slicing
 - Posted sample inference notebook to github
 - Ran inference test on testset to confirm notebook working as desired
 - Discussed short paper/poster opportunity due July 19
- Overhead
- Out of Office
 - June 10 Medical appointment
 - June 15, 17. 19 Medical Appointment
 - September 21-24 IEEE Oceans Conference Monterey

Week 24

- 901103 - Biodiversity and Biooptics of Zooplankton
- 901502 - Ocean Soundscape
 - Great progress and success doing agile modeling on Google perch2 model using perch-hoplite vector database system. Labeled ~200 examples of orca/not orca (roughly 50/50), trained 2 linear classifier models against embeddings from one day of data, and inference one day,

with some 220 detects. Will screen detects in RavenPro to assess accuracy.

- Next steps – get embeddings from a month of data, expand the training set, and inference over multiple days.
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Welcome summer intern Sarah Williams, graduate of Harvey Mudd College, soon to matriculate as Masters CS student University of Chicago.
 - Sarah is working on training a new version of RF-DETR detector (updated by Roboflow team) and training/comparing with Yolo26. Great progress already. She is working in CoLab and on her MacBookPro M1 from IS.
- Overhead
 - Budget and proposal work
- Out of Office
 - June 10 Medical appointment
 - June 15, 17. 19 Medical Appointment
 - September 21-24 IEEE Oceans Conference Monterey

Week 23

- 901103 - Biodiversity and Biooptics of Zooplankton
- 901502 - Ocean Soundscape
 - Good progress on adapting google perch-hoplite to MARS PAM dataset. First trial running One selected day of data containing known Orca calls near completion.
 - Ported google perch-hoplite to dgx spark system.
 - Presented status at project team meeting.
 - Plan team meeting on 2027 proposal June 4.
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
- Overhead
 - Intern prep
- Out of Office
 - June 1 Medical appt
 - June 10 Medical appointment
 - September 21-24 IEEE Oceans Conference Monterey

Week 22

- 901103 - Biodiversity and Biooptics of Zooplankton
- 901502 - Ocean Soundscape
 - Working on porting perch2.0 hoplite to dgx spark system
 - Team meeting
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Team meeting
- Overhead

- Project conference call with summer intern Sarah Williams
 - May 26. [AI/ML Sack Lunch](#), Voxel51 presentation, Laura Chrobak
- Out of Office
 - May 21 Dental appt. AM
 - June 1 Medical appt.
 - September 21-24 IEEE Oceans Conference Monterey

Week 21

- 901103 - Biodiversity and Biooptics of Zooplankton
- 901502 - Ocean Soundscape
 - Continued work reviewing 10 minute sound segments flagged by OrcAI with many “orca” detects.
 - Meet with John R. to review some of those sound segments – what are they? Orca? Humpback? Other??
 - Team meeting May 20.
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Team meeting.
- Overhead
 - Discuss project ideas for summer intern Sarah Williams with Danelle. Plan for a video call with Sarah Williams to present some of the ideas.
- Out of Office
 - May 18 Medical appt. AM
 - May 21 Dental appt. AM
 - September 21-24 IEEE Oceans Conference Monterey

Week 20

- 901103 - Biodiversity and Biooptics of Zooplankton
- 901502 - Ocean Soundscape
 - Processed one month of PAM data through OrcAI model mining for orca and dolphin vocalizations. To correlate with sightings posted on [California Killer Whale Project](#)
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Released github repo with UAVS RF-DETR inference CoLab notebook and sample data files to UCSC project intern Sage
- Overhead
- Out of Office
 - May 12 Medical appt.
 - May 13 Medical appt. AM
 - 21-24 September: IEEE Oceans Conference

Week 19

- 901103 - Biodiversity and Biooptics of Zooplankton

- 901502 - Ocean Soundscape
 - Processing November 2021 through Google whale-multispecies model, and through OrcAI model, mining for orca calls.
 - Submitted abstract to IEEE Oceans 2026 conference
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
- Overhead
 - Preparing for summer intern Sarah Williams
 - Watching selected abstract presentations
- Out of Office
 - May 6, 2026 Medical appt.
 - 21-24 September: IEEE Oceans Conference

Week 18

- 901103 - Biodiversity and Biooptics of Zooplankton
- 901502 - Ocean Soundscape
 - Completing abstract on orca call detection with ML for IEEE Oceans conference 2026
 - Identifying and collecting annotations / clips of orca and dolphin calls recorded in pacific ocean sound recordings.
 - Ran job resampling 256 kHz audio recordings 2020 October to 24kHz, 322kHz, 48kHz as required by different models (Google multi-species whale, orcAI, Perch2.0)
 - Plan to resample March 2026, March 2019, late December 2024 when pods of orcas were reported by California Killer Whale Project to see if models can detect their vocalizations.
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Team meetings
- Overhead
- Out of Office

Week 17

- 901103 - Biodiversity and Biooptics of Zooplankton
- 901502 - Ocean Soundscape
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
- Overhead
- Out of Office

Week 16

- 901103 - Biodiversity and Biooptics of Zooplankton
- 901502 - Ocean Soundscape
 - Continuing evaluation of Perch-hoplite Perch2.0 model embeddings for few-shot transfer learning.

- Resampling 2018 April month of Pacific Sound data to 32kHz for Perch2.0 . Stored in
smb://thalassa.shore.mbari.org/PAM_Analysis/GoogleMultiSpeciesWhaleModel2/resampled_32kHz/2018/04/
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Team meeting
 - Weekly check-in meeting with Tim Sananikone. Plan to submit abstract to IEEE Oceans Conference 2026 Monterey
- Overhead
 - Project proposal workshop
- Out of Office

Week 15

- 901103 - Biodiversity and Biooptics of Zooplankton
- 901502 - Ocean Soundscape
 - Team meeting
 - Reviewing update to [OrcAI](#) repository. Plan to update my clone and run tests.
 - Running test of Amrit's [whalu](#) Pacific Sound data fetch and run inference tool. Looking to integrate with Perch2.0 foundation model.
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
- Overhead
 - Teleconference, with Danelle, with intern candidate / collaborator candidate Nichols (Spain) AM April 10.
- Out of Office
 - Dr. Appointments AM April 2, 6, 7
 - Working from home April 7 - 10

Week 14

- 901103 - Biodiversity and Biooptics of Zooplankton
- 901502 - Ocean Soundscape
 - Team meeting
 - Continuing investigation of [perch2](#) - [hoplite](#) for agile modeling of orca / dolphin calls.
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Team meeting
- Overhead
 - Summer intern application screening and finalist zoom interviews.
- Out of Office

Week 13

- 901103 - Biodiversity and Biooptics of Zooplankton
- 901502 - Ocean Soundscape

- Continued evaluation/exploration of perch 2.0 - hoplite applied to MBARI soundscape recordings. I am posed to do transfer learning using some of our orca and dolphin recordings harvested from earlier model investigation.
 - Team meeting
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Team meeting
- Overhead
 - Group meeting.
 - Intern 2026 evaluation and selection. Scheduling teleconference interviews with top 3 candidates.
- Out of Office
 - Medical Thurs March 19 2026

Week 12

- 901103 - Biodiversity and Biooptics of Zooplankton
- 901502 - Ocean Soundscape
 - Orcas in the bay reported March 17. Did we hear them in the MARS pacific soundscape recordings? And if we did, can we tell which population of orcas are they, and can we guess why they are in the bay?
 - Meeting with Yanwu on his efforts to separate orca and dolphin calls.
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Intern application processing due Mar 23, 2026
 - Team meeting
 - Meeting with Tim.
- Overhead
 - Completing [deeplearning.ai](https://www.deeplearning.ai) Agentic AI course. Next up, Anthropic AI Fluency foundational course.
- Out of Office
 - Medical Thurs March 19 2026

Week 11

- 901103 - Biodiversity and Biooptics of Zooplankton
- 901502 - Ocean Soundscape
 - Team meeting
 - Exploring Perch 2.0-hoplite bioacoustics foundation model
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Team meeting
- Overhead
 - Agentic AI on-line course work
- Out of Office
 - Medical Thurs March 19 2026

Week 10

- 901103 - Biodiversity and Biooptics of Zooplankton
- 901502 - Ocean Soundscape
 - Reading “Perch 2.0 transfers ‘whale’ to underwater tasks” Dec 2025 – supervised bioacoustics foundation model applied to marine mammal (orca) audio after few-shot transfer learning. Plan to test against MBARI MARS audio data
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Finishing “threshold” parameter sweep of UAVS RF-DETR detection model with benchmark dataset
 - New RF-DETR release; will need to retrain model to pick up new weights and configuration
- Overhead
 - Virtual presentation poster and reading posters and presentations from Ocean Sciences Meeting 2026.
- Out of Office
 - Medical AM Thurs March 5 2026

Week 9

- 901103 - Biodiversity and Biooptics of Zooplankton
- 901502 - Ocean Soundscape
 - Team meeting
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Implemented roboflow subversion sliced inferencing for UAV images in RF-DETR detection pipeline. Analyzing the results.
 - Next step, sweep detection threshold to find optimal true positives vs false detections.
 - Present kelp segmentation poster virtually at OSM conference. Teleconference set up for 8AM PDT 2/26/2026. (Tim is presenting 9PM PDT 2/25/2026)
- Overhead
 - Group meeting
- Out of Office
 - Medical Weds Feb 18 2026

Week 8

- 901103 - Biodiversity and Biooptics of Zooplankton
- 901502 - Ocean Soundscape
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Adding supervision sliced inference to RF-detr detector pipeline. Should be ready for testing at the end of this week.
- Overhead

- 2/17/2026 Compensation presentation
 - Performance review
- Out of Office
 - Medical Weds Feb 18 2026

Week 7

- 901103 - Biodiversity and Biooptics of Zooplankton
- 901502 - Ocean Soundscape
 - Team meeting
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Working on completion of Poster for Ocean Sciences Meeting. Super job Melissa!
 - Incorporating team input to poster text and figures. Thanks Tom O'Reilly for adding scale bar to poster UAVs image.
 - Tim and Duane to present the poster Thursday at the in-house OSM poster session.
 - Enoch to carry physical poster to Edinburgh and present poster live Feb 26.
 - Tim and Duane to present the poster virtually Feb 26.
- Overhead
- Out of Office

Week 6

- 901103 - Biodiversity and Biooptics of Zooplankton
- 901502 - Ocean Soundscape
 - Met with Yanwu. Dolphin vs Orca confusion.
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Team meeting
 - Continued evaluation of testset with RF-Detr detector.
 - Plan to integrate SAHI with RF-Detr inference flow.
 - Poster work for OSM meeting.
- Overhead
- Out of Office

Week 5

- 901103 - Biodiversity and Biooptics of Zooplankton
- 901502 - Ocean Soundscape
 - Team meeting
 - Explored confidence threshold on OrcAI model. A low setting (0.1) lets in a lot of false positives. The default setting of 0.5 seems about right.
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach

- Debugging output of benchmark test set from tator database, in preparation for making coco format version for inference through RF-DETR detector.
 - Working on poster for OSM meeting with Tim Sananikone.
 - Team meeting.
- Overhead
 - Performance review work
- Out of Office
 - Appts AM January 28, January 29.

Week 4

- 901103 - Biodiversity and Biooptics of Zooplankton
 - Project discussion with Danelle.
- 901502 - Ocean Soundscape
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Team meeting.
 - Plan to work on running our benchmark dataset through the RF-DETR detector to establish benchmark performance metrics.
- Overhead
 - Annual performance appraisal work.
- Out of Office

Week 3

- 901103 - Biodiversity and Biooptics of Zooplankton
- 901502 - Ocean Soundscape
 - Team meeting Jan 14.
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Team meeting Jan 13.
 - Preparing to download and analyze benchmark testset through our best RF-detr object detector, to gather metrics. It will be useful to have the metrics and workflow in place to compare data and model performance with our new higher-resolution camera and lens setup.
- Overhead
- Out of Office
 - January 8, 2026. Thursday. Personal Day

Week 2

- 901103 - Biodiversity and Biooptics of Zooplankton
 - Project discussion with Danelle.
- 901502 - Ocean Soundscape
 - Analyzing output of OrcAI model for MARS soundscape archive month of April 2018. Trying to resolve confusion of Orca sounds with sounds from Dolphins and Baleen whales.

- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Team meeting
 - Starting work on Poster for OSM March 2026.
- Overhead
- Out of Office
 - January 8, 2026. Thursday. Personal Day