

Engineering Weekly Report 7/25/2024 - 8/1/2024

Engineering Weekly Report

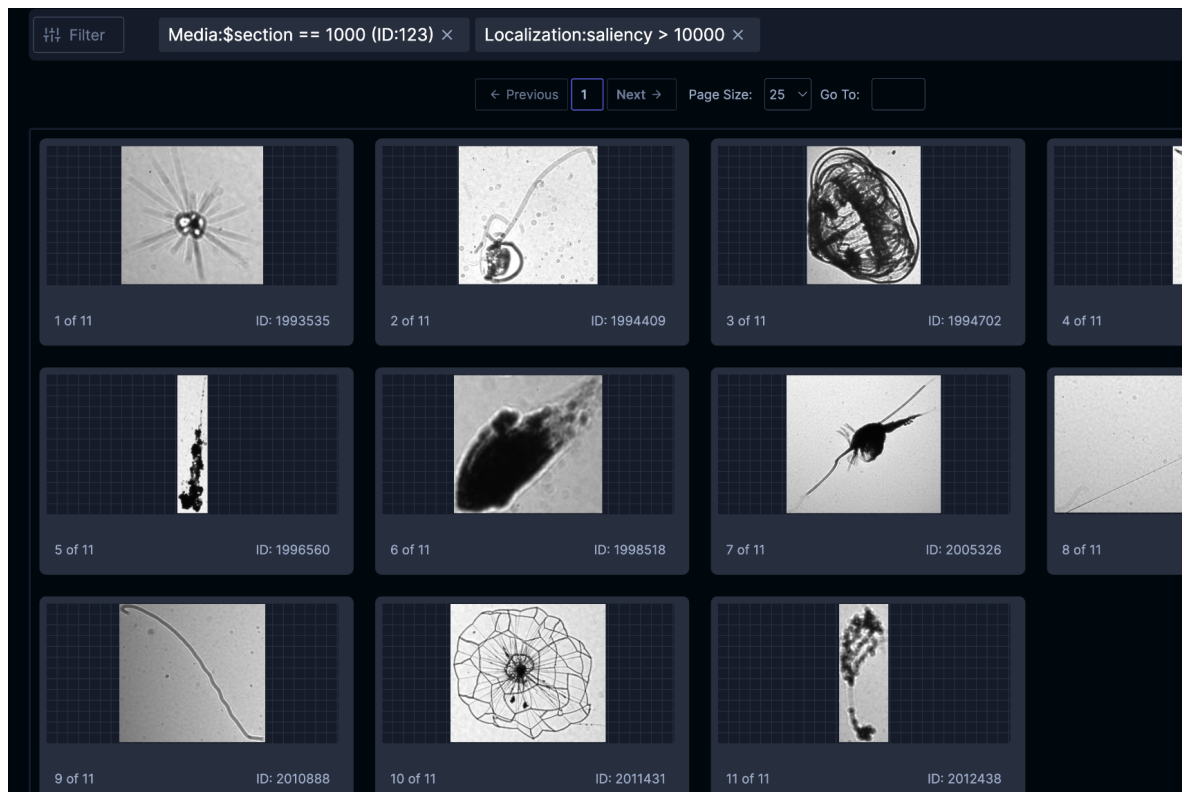
<https://docs.mbari.org/internal/projects/Engineering/Weeklies/2024/>

Executive Council Notes

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Individual Activities

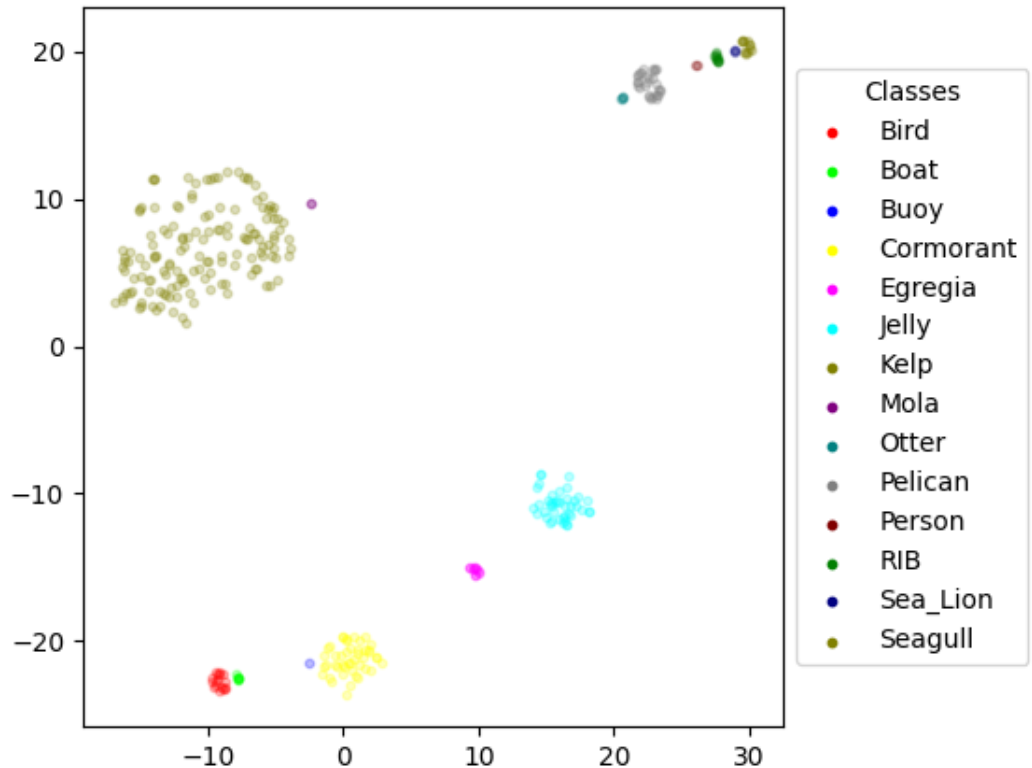
- Michael Anderson
- Kevin Barnard
 - Out of Office
 - MBARI Open House comp day Jul 19, 2024
- Francois Cazenave
 - 901405 - Wave-Energy Conversion for Oceanographic Applications
 - Monitoring buoy
 - Working on new tether order
 - 902106 - Niobicon-Based AUV Docking Development
 - Solve problem with photosensor
 - Project management
 - 902204 - Scalable Robotics
 - Design of mini rov sled
 - Overhead
 - Diving physical
- Danelle Cline
 - 902111 - Carbon Flux Ecology
 - Adding in performance metrics to pipeline and refactoring for apache beam implementation
 - Fixed bugs in small cluster edge cases and added batch inference for performance boost
 - Fernanda has loaded 1000 ISIIS images with 20000 particles; expect to start labeling soon. Sneak peek at a few detections with high saliency



- 901502 - Ocean Soundscape
 - Working on PBP plotting bug fixes with team
 - Travel plans for upcoming SoundCoop workshop
 - Discussion with EarthSpecies team about audio-to-audio search and model training collaboration
 - Hosted weekly group meeting (John on vacation)
- 901902 - Unoccupied Aerial Vehicles for Science, Operations, and Outreach
 - Adding in performance metrics to pipeline and refactoring for apache beam implementation
 - Per class performance metrics are top-3 accuracy .983, top-3 accuracy .947. Good class separation.

t-SNE of 768-dimensional vectors 901902-UAV exemplars

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- Fixed bugs in small cluster edge cases and added batch inference for performance boost
- Overhead
 - Follow-up with D.Edgington on planktivore meeting
- Out of Office
 - September 24/25 NOAA SoundCoop workshop Boulder, CO
 - Oct 7-10 - 5th Marine Imaging Workshop in Monterey
- Duane Edgington
 - 901502 - Ocean Soundscape
 - Team meeting
 - 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Team meetings
 - 902004 - Planktivore
 - Henry Ruhl meeting on planktivore ROI classification and upcoming MiW workshop
 - 902111 - Carbon Flux Ecology
 - Project meeting with Fernanda and Danelle
 - Looking into fine-tuning ViT [google/vit-base-patch16-224](https://google.github.io/vit-base-patch16-224/)
 - Overhead
 - Working on feedback regarding project proposal requests for 2025
 - Out of Office
 - Sept 17 - 20, 2024. PyTorch Conference, San Francisco
 - Oct 21 - Nov 8, 2024. Vacation UTC+1
- Jon Erickson
- Kevin Gomes
 - 200105 - Core Navigation - MDUC
 - Lots of updates to ship API
 - Dataprobe working against new API

- Built new LCM bridge that sends message to Telegraf socket to be converted and stored in InfluxDB
- Overhead
 - Proposal review
- Out of Office
 - Jun 21
- Andy Hamilton
- Kent Headley
- Rich Henthorn
 - Out of Office
 - July 16: SINKER test on Carson
 - Aug 5 - 8: WFH
 - Aug 26 - Sep 11: Vacation
- Akshay Hinduja
- Brett Hobson
- Irene Hu
 - 901217 - Chemical Sensors
 - Troubleshooting on MSC3. Issue with comms while plugged into baseboard traced to strange behavior of reset, disappeared after various troubleshooting measures
 - Testing pH comms with MSC3. Hardware is built, need to update code
 - 901904 - Deep-Sea Coral-Sponge Community Observatory
 - Code tested and functional for controlling jbox and other basic controller functions
 - UDP working for ethernet comms with controller; code updated to pass through commands over UDP. Working on final troubleshooting
 - UV tester LED puck assembled, spectra measured
 - Out of Office
 - July 10 - Aug 5: regularly out of office
- Scott Jensen
 - Out of Office
 - July 18-23 vacation
 - July 24-29 vacation
- Brent Jones
- Chad Keczy
 - Out of Office
 - Out of office on Fridays
- Brian Kieft
 - 300083 - DMO Support - LRAUV
 - Standard on call for deployments happening in Monterey Bay. Currently that's Daphne and Ahi.
 - 706007 - LRAUV USGS Great Lakes Prey Fish Assessment
 - Triton was recovered this morning from Cheboygan MI after 10 days of bioacoustic survey. Next stop is Lake Superior.
 - 902106 - Niobicon-Based AUV Docking Development
 - Docking was going well but the arm is having communication issues. Attempted LCB swap which worked for a little bit but then failed again. Diagnosis needed.
 - Out of Office
 - 07/29-0802 (EDT)
- Denis Klimov
 - 902004 - Planktivore
 - Evaluating the benthic battery pack reuse for Planktivore September deployment. Ordered replacement fuses and connectors

- 902401 - Geo-Sense
 - We had a Zoom meeting with Patrick at Solifos who is describing an interesting options for the DAS (Distributed Acoustic Sensing) cable, including DTS (Distributed Temperature Sensing) and DST (Distributed Strain Sensing).
- Eric Martin
 - Out of Office
 - Vacation Friday July 29-30
- Thom Maughan
 - Out of Office
 - July 1-5 Vacation canceled, working on the 4th
 - July 20 to July 26 Vacation
 - Aug 2nd half, maybe a week or so
 - Oct two to three weeks vacation Colorado.
- Mike McCann
 - Out of Office
 - 20 June - 19 July: Vacation
 - 22 - 25 July: ESIP Federation Summer meeting, Asheville, NC
 - 28 July - 1 August: SIGGRAPH, Denver, CO
- Rob McEwen
- Paul McGill
 - 300070 - DMO Support - Ventana
 - Did more troubleshooting and adjustments on Ventana joystick
 - 701147.99 - MARS IV Node Upgrade
 - Reading docs for Meinberg precision clock so I can update firmware
 - 902101 - LRAUV Technology Development
 - Working with Brett to troubleshoot issues with RS-485 on LRAUV. Found an issue that may or may not be the problem but we'll fix it and do further testing at sea
 - Overhead
 - Working on upgrading OrCAD but my computer's hard disk is full so it's making the process much more difficult
- Enoch Nicholson
 - 706008 - READI-Net
 - Instrument Design Updates & beginning to purchase components
 - 901007 - Benthic Biology & Ecology
 - Met to discuss upcoming test plan
 - 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - BVLOS flight planning (Trinity)
 - Reading up on regulations / state of waivers
 - Out of Office
 - April 5-10 Vacation (Available via Slack & Email)
 - April 14-18 IEEE Oceans (Available via Slack & Email)
 - April 19-23 Vacation (Unavailable)
 - September 19-24 Vacation (Available via Slack & Email)
- Tom O'Reilly
- Mike Risi
 - Out of Office
 - Offsite on Tuesday and Friday
 - January 16 - January 19, 2024
 - February 22, 2024
 - March 4 - March 8, 2024 - vacation

- April 24, 2024 - vacation
 - May 20 - May 24, 2024 - vacation
 - June 17 - June 18, 2024 - vacation
 - September 3 - September 9, 2024 - vacation
- Paul Roberts
 - 702108.99 - 6-eye camera-compute mod
 - Planning for build, sourcing parts
 - 901809 - Deep Sea Bioinspiration
 - Chiton 1500 assembly
 - 902004 - Planktivore
 - Ahi 15 deployment
 - 902204 - Scalable Robotics
 - PoE can and MiniROV testing
 - 902306 - SINKER
 - side-looking camera chassis design
 - Out of Office
 - Aug. 16 2024 - CES Northstar
 - Aug. 30 2024 - CES China Peak
- Brent Roman
 - Out of Office
 - June 20 - June 31 (gunkholing in the Sacramento Delta)
 - July 1 - Aug 31 (Vacation in Japan)
- Carlos Rueda
 - 901502 - Ocean Soundscape
 - Advancing notebook spaces: [JupyterLab](#) on [gizo](#) (now more stable and with access to host machine for persistence), and an external one on <https://mybinder.org> in preparation for a NOAA workshop. Sent heads-up to the organizer regarding limited resources on mybinder.org.
 - With Danelle, worked on fixing long standing issues with PBP plotting in notebooks.
 - 902101 - LRAUV Technology Development
 - TethysDash backend is now [4.80.0](#).
 - Dash4 is now [4.70.4](#). As usual, especially during vehicle deployments, great user feedback (this time, in particular, by Monique).
 - Worked with Ilya L./Saab (Quinn also worked with him last week), and, upon fixing a setting related with HTTPS access, **their LRAUV simulator is now finally connecting with their TethysDash backend!** Now, the only major piece still pending is for them to have an IMAP account/server so TethysDash can handle incoming emails.
 - 902204 - Scalable Robotics
 - Prioritizing/advancing tasks.
 - Overhead
 - Reading proposals toward proposing possible reallocations of my time.
 - Maintenance of [ecoz2rs](#) triggered by vulnerabilities reported by dependabot.
 - Consolidated some old experiments in <https://github.com/mbari-org/lrauvdefs>.
 - Enabled syntax highlighting for the [se-ie-doc](#) site and updated some pages to use it.
 - Out of Office
 - July 22–25: vacation
 - TBD a week or so in Aug/Sep: vacation
- Karen Salamy
 - 200103 - Core CTD Data - MDUC
 - Working to update ROV CTD O2 QC dives in the EXPD. These are the last updates from ETP3 before retirement. Have a great retirement Ed and thanks for everything over the years!

- 300057 - Mooring Maintenance
 - Keeping an eye on the mooring downloads, particularly OA2 which was having issues earlier in the week.
- 902101 - LRAUV Technology Development
 - Pushed various map updates to the repo on Github and updated Dash5 on okeanids this week.
 - I also had my last ZOOM meeting with Jim Jeffers. Hopefully he has given me enough to complete the issues for the map over the next few months.
- Overhead
 - Attended workplace violence online seminar and completed self-certification
 - Completed my travel plans, tickets and stay for the US React Summit in November.
 - Transferred pre-cruise responsibilities from Matt S. to Lisa E. while Matt is in Europe with the R/V David Packard.
- Out of Office
 - Vacation: August 20-28, 2024
 - On-campus 3 days/week (**T, W, TH**).
- Brian Schlining
 - 500055 - VARS, M3/RS, DSG
 - Prepping new kb service, [Oni](#), for deployment at MBARI
 - 902002 - FathomNet
 - [Working on mitigation](#) for bounding boxes in FathomNet that [extend past the edge of an image](#).
 - 902404 - 5th Marine Imaging Workshop
 - Brian wrote and sent out abstract acceptance notifications and has been working with Jen Durden on the science program. Lots of work on organizing the science program and hands-on workshops. Also wrote a number of letters of invitation for folks applying for visas for the workshop. There are 36 talks, 72 posters, and 14 interactive workshops
 - The web site has been updated with additional information and revised schedule.
<https://miw2024.org/>
 - Overhead
 - A recent update to titan broke one of the [LTO manager apps](#). That's been fixed.
 - Closed out recent trips with accounting and University of Hawaii.
 - Out of Office
 - Jul 15-24 - Vacation
 - Aug 19-22 Vacation
 - Sep 5-9 - Vacation
 - Oct 7-10 - 5th Marine Imaging Workshop in Monterey
- Alana Sherman
 - 902401 - Geo-Sense
 - Group meeting this week, trying to focus on what we can do while waiting for the long lead items
 - 901205 - ESP/Readinet
 - Working through feedback from George on Fido board
 - Adding some final features (battery back up, low voltage interrupt)
 - Overhead
 - Starting proposal review
 - Updated orcad
 - Out of Office
 - Was on vacation 7/18-26
- George Stern
 - 902204 - Scalable Robotics
 - Tested glass transition and adhesion at elevated temperature of two optical potting compounds

- Thermal and initial qualitative optical tests on led light boards in AI channel with varying aspect ratios
 - Brought up CTD interface boards
 - AI channel heatsink design and mola mounting
- 902306 - SINKER
 - Identified issue on battery interface board - wrong jumper value specified, James is repairing a few ICs
- Justin Tucker
 - 300078 - DMO Support - AUV
 - Reanalysis of INS housing to fine tune safe hydrostatic test pressure.
 - Searching for test facility availability for housing.
 - 901101 - Seafloor Mapping
 - Lens hood FOV clearance modification
 - Overhead
 - Debugging upgrade and license issues with Ansys RSM on linux
- Johann Voigtlander
 - 902204 - Scalable Robotics
 - Debugging VN300 issue with vectornav
 - Purchased antenna upgrades, mounted new antenna on boat
 - 902208 - Mini ROV Operations
 - Assisted moving 20' container back
 - Reconnected control van to ROV
 - Mounted Oculus MD1200d to MiniROV
 - Re-installed all ComPas hardware into control van
 - 902402 - CSEM
 - Met with Steve Constable, a CSEM expert and talked about the system and potential upgrade points
 - I am working with Eliana to determine the timing between the start of the transmission and when the sensors first detect the signal
 - Out of Office
 - April 16th - May 7th Germany CSEM
 - May 8th - May 12th Vacation