

902002 - FathomNet

Week 50

1. Brian Schlining
 - a. Meeting with Squiddle devs re: FathomNet integration

Week 49

1. Kevin Barnard
 - a. Conducted OVAI program manager and engagement coordinator interviews

Week 48

1. Kevin Barnard
 - a. Added explicit embargoed concept check to Twitter bot
 - b. Handling submission from Alexa Runyan
 - c. OVAI program manager interviews
2. Brian Schlining
 - a. Continuing to work on VARS to FathomNet sync.
 - b. Merged a [pull request](#) for the OVAI games and redeployed them.

Week 46

1. Kevin Barnard
 - a. Discussed 2023 tasks

Week 45

1. Brian Schlining
 - a. Set up JIRA cloud (free tier) for the Ocean Vision AI project.

Week 44

1. Kevin Barnard
 - a. Modified Twitter bot to use new model/model server
2. Brian Schlining
 - a. Investigated how to track funders for submitted data sets
 - b. Run tests with yolov5 with 33k and new 315k models.
 - c. For the ocean vision AI games([here](#), [here](#), and [here](#)), [investigated issues](#) with logging a users game results
 - d. [Continuing workarounds](#) for VARS to FathomNet sync to deal with major one-time import from ML proposals.

Week 43

1. Kevin Barnard
 - a. Implemented sort by central region average hue and depth in vars-gridview

Week 42

1. Brian Schlining
 - a. [Modifying the import from VARS and FathomNet](#) to deal with the mess created by a ML generated bounding box import done by the video lab. This task is temporarily on hold due to yesterday's [FathomNet press release](#). (We don't want to break anything while FathomNet is getting media attention)
 - b. The FathomNet team met with our new web designer, Katie Parker, to discuss [proposed enhancements](#).

Week 41

1. Brian Schlining
 - a. Working on the [VARS-FathomNet sync](#) to accommodate weird, one-off, import path used to [load ML proposals into VARS](#)

Week 39

1. Brian Schlining
 - a. New publication is out: Katija, K., Orenstein, E., Schlining, B, Lundsten, L, Barnard, K., Sainz, G., Boulais, O. Cromwell, M., Butler, E., Woodward, B. and Bell, K.C. FathomNet: A global image database for enabling artificial intelligence in the ocean. 2022. Scientific Reports **12**, 15914. <https://doi.org/10.1038/s41598-022-19939-2>

Week 38

1. Brian Schlining
 - a. For OceanVisionAI games support.
 - i. Added endpoint for generating leaderboard scores: for example: <https://fathomnet.org/ovaigame/scores?mode=tetris&activeSpecies=fish>
 - ii. Added SSL proxy to [game logger](#). e.g. <http://fathomnet.org:8899/logs> is proxied by <https://fathomnet.org/ovaigame/logs>
 - iii. The [games](#) have been deployed to:
 1. <https://fathomnet.org/fathomnet-no-timer/tetris/production>
 2. <https://fathomnet.org/fathomnet-no-timer/timed/production>
 3. <https://fathomnet.org/fathomnet-no-timer/non-timed/production>

Week 37

1. Kevin Barnard
 - a. Re-generated midwater dataset for CVision AI model
2. Brian Schlining
 - a. Image size information is needed to correctly sync localization data from VARS to FathomNet. [Added image sizes](#) to 900K images in VARS that were missing this information.
 - b. Refined [milestones](#) for the next phase of FathomNet development.
 - c. Updated the [OceanVision AI game logger](#) to track changes in logging formats that the remote devs keep making.
 - d. [Added SSL](#) to all FathomNet APIs as well as the main website.
 - e. Reviewed proofs for the new FathomNet paper accepted to Scientific Reports.

Week 35

1. Brian Schlining

- a. Deployed a new [OceanVision AI game logger](#). The logger is written using [Quarkus](#). API docs at <http://fathomnet.org:8899/q/swagger-ui/>. GraphQL docs at <http://fathomnet.org:8899/q/graphql-ui/>
- b. Laid out [development road map](#) for FathomNet for remainder of 2022.

Week 34

1. Kevin Barnard
 - a. Set up seminar at CSUMB in December via the ENSCI dept.
2. Brian Schlining
 - a. Writing a new [Oceanvision AI game logger](#).
 - b. Created [milestones](#) for upcoming, externally funded work. Starting work on a development plan for [beta-2](#).

Week 33

1. Brian Schlining
 - a. Organized the next [three milestones](#).
 - b. Reviewing community feedback to add to milestones.
 - c. Group meeting

Week 32

1. Kevin Barnard
 - a. Minor improvements to vars-localize

Week 29

1. Kevin Barnard
 - a. Worked through some issues with merged bounding boxes
 - b. Resolved issues with CVision AI model server
2. Brian Schlining
 - a. [Podman](#) has improved their systemd support. (It used to be essentially unusable). New docs for it are [here](#). Deployed FathomNet using systemd/podman.
 - b. Working on localization data cleanup and [re-import into FathomNet](#) and for VAA model training.
 - c. Merging the [fathomnet-m3-sync](#) project into [fathomnet-support](#) to reduce redundant code and maintenance costs.

Week 28

1. Kevin Barnard
 - a. Improvements to the FathomNet Twitter bot
 - i. Custom image URL handling
 - ii. Slimmed Docker image
 - iii. Ran on JWST first images
 - b. Generated concept → class mappings for midwater model to be trained by CVision AI

Week 23

1. Brian Schlining
 - a. [Discussions with the BIIGLE team](#) about the [ifdo](#) 'standard'.
 - b. Wrote a [proof-of-concept ifdo to FathomNet csv converter](#).

Week 22

1. Brian Schlining
 - a. Updated the [fathomnet REST service](#) to address database deadlocks that can occur when large updates are pushed while the site is under heavy usage.
 - b. Pushed 16K localizations from VARS into FathomNet. This push is mostly midwater localizations. Example data set is [here](#).
 - c. Working on merging localizations from a staging database into the main VARS database. The work on VARS Annotation and discussions with the video lab on how to accommodate this have been done. The merge will result in some annotations being double counted. These new localizations will be put in a different group than the ROV annotations so that can be id'd as potentially non-quantitative annotations.

Week 21

1. Kevin Barnard
 - a. Pulled down all localizations and corresponding images from VARS and ML database into Pascal VOC for model training

Week 20

1. Kevin Barnard
 - a. Met with VIAME and BIIGLE to discuss potential interactions with FathomNet
 - b. Started working on Medium article for FathomNet-compatible image serving solutions
2. Brian Schlining
 - a. Deployed first iteration of Ocean Vision AI game to <http://fathomnet.org/game-prototype-v0.2.0>
 - b. Meetings with Viame, Biigle developers to discuss FathomNet integration.
 - c. Reviewed abstracts for marine imaging workshop

Week 19

1. Kevin Barnard
 - a. Implemented [keras-model-client](#), a Python client for running images through a remote FastAPI model server
 - b. Deployed FathomNet Twitter bot on Eione
2. Brian Schlining
 - a. Reviewed 2023 abstract for continuing FathomNet
 - b. Deployed Ocean Vision AI game to <http://fathomnet.org/ocean-one-timer-0.1.2/#/>

Week 18

1. Kevin Barnard
 - a. Completed and dockerized FathomNet Twitter bot; awaiting deployment

Week 17

1. Kevin Barnard
 - a. Wrote script for ML -> VARS merge
 - b. Ran IoU experiments against ML/VARS localizations

Week 16

1. Kevin Barnard
 - a. Patched timecode issue in vars-gridview
 - b. Completed box-diff for localization difference analysis/ML to VARS DB merge

Week 15

1. Kevin Barnard
 - a. Continued development of FathomNet Twitter bot
 - b. Wrote [box-diff](#) for image set comparison
 - c. Started writing loader for corrected ML proposals in ML database → VARS
 - d. Prepared initial data for FathomNet game prototype
2. Brian Schlining
 - a. Discussion with NOAA over statement of work for archiving backups of FathomNet and generating DOIs for versions of FathomNet. Also discussed workflows for having NOAA serve and archive external contributions of images into FathomNet.

Week 14

1. Kevin Barnard
 - a. Presented the fathomnet-py Python API in the FathomNet workshop
 - b. Converted Twitter bot to Apache Airflow DAG
2. Brian Schlining
 - a. Presented at FathomNet workshop last Thu and Fri

Week 13

1. Kevin Barnard
 - a. Finished preparation of material for FathomNet workshop
 - b. Implemented sorting by timestamp in vars-localize for midwater localization effort
2. Brian Schlining
 - a. Preparing for upcoming FathomNet workshop on Thu and Fri
 - b. Merged and deployed [PR](#) to include Google Analytics in FathomNet
 - c. Integrated our new [WoRMS name server](#) into FathomNet's [REST API](#). That automatically makes it available on the website.
 - d. Met with the team to discuss deploying the ocean AI classification game on MBARI hardware.

Week 12

1. Kevin Barnard
 - a. Gave project update 3/21/2022
 - b. Finished preparing workshop materials for Python API demonstration
2. Brian Schlining
 - a. Built a fast WoRMS taxonomic name server for FathomNet. This will also enable some other automations for other projects (e.g. notify video lab when the VARS KB and WoRMS drift apart). <https://github.com/fathomnet/worms-server>
 - b. Gave part of the project update on Monday
 - c. Prepping for next week's FathomNet workshop

Week 11

1. Kevin Barnard
 - a. Preparing FathomNet project update & workshop materials
 - b. Finished writing the plumbing for the FathomNet Twitter bot
2. Brian Schlining
 - a. Working with the team to prep for the upcoming FathomNet workshop. Working on presentations too.
 - b. Working on presentation for Monday's project update
 - c. [Investigating loading WoRMS](#) into a VARS KB server.

- d. [Fix to prevent very large searches](#) that can cause a service to fail.
- e. Did some testing with capturing metrics using [gtag](#)

Week 10

1. Kevin Barnard
 - a. Started Colab notebook for FathomNet workshop to demonstrate Python client API
 - b. Started Twitter bot for FathomNet outreach
 - c. Finished implementation of sharktopoda-client-py; testing client localization sync between BoxJelly and Cthulhu
2. Brian Schlining
 - a. Working on presentations for the upcoming FathomNet workshop.
 - b. Chrome's security restrictions have changed and reports a link to an external font as a phishing attack. This has been addressed.

Week 9

1. Brian Schlining
 - a. Preparing for upcoming workshop and project update.

Week 7

1. Kevin Barnard
 - a. Reworked dfg-tool architecture; testing and preparing to hand off to VL
 - b. Released vars-localize with Raziel integration
 - c. Upgraded vars-localize and vars-gridview to support Python 3.10 & Qt 5.15+

Week 6

1. Kevin Barnard
 - a. Upgraded fathomnet-py with support for image tag CRUD operations; released v0.4.1
 - b. Continued integration of BoxJelly with Cthulhu
 - c. Revived dfg-tool codebase for automated digital video frame grabbing; modernizing and testing prior to video lab use
2. Brian Schlining
 - a. Working on podman networking between two containers. Re-deployed FathomNet using podman pods.
 - b. Meeting with [BIIGLE](#) dev about coordination with FathomNet
 - c. Discussions with NOAA/NCEI on statement of work for archiving some fathomnet images as well as data/metadata archival formats.
 - d. Added [tag API](#) to FathomNet to allow adding coverage estimate tags.
 - e. FathomNet has purchased the domain names oceanvisionai.net and oceanvisionai.com.
 - f. Working on adding annotation coverage estimates to all images in FathomNet. (Image below: Blue is human annotated, yellow is ML annotated, green is the intersection of ML with human)

Week 5

1. Kevin Barnard
 - a. Concluded YOLOv5 output confidence correspondence with reviewed bounding boxes in ML DB
 - b. Implemented UDP video control and ØMQ localization control toward integration of BoxJelly and Cthulhu
2. Brian Schlining

- a. Implementing a % coverage estimator to report on images in FathomNet. It uses an ML endpoint, provided by CVisionAI, that proposes localizations on an image, and compares those results to the localizations in FathomNet. (Team private repo at <https://github.com/fathomnet/fathomnet-support>)

Week 4

1. Kevin Barnard
 - a. Met with Simon-Martin Schröder to discuss MorphoCluster & brainstorm application to FathomNet
 - b. Finished integration and testing of vars-localize + Raziel
 - c. Continued development of sharktopoda-client-py toward BoxJelly + Cthulhu integration
 - d. Working on correspondence between inference confidence numbers over ML evaluation set and ML database bounding box associations
2. Brian Schlining
 - a. [Discussion](#) with MorphoCluster team about integrating it into our tools. They are also interested in using our vars-kb-server in their tools.
 - b. Looking into ML image annotation as a service using <https://gitlab.com/bgwoodward/keras-model-server-fast-api>

Week 3

1. Kevin Barnard
 - a. Towards BoxJelly/Cthulhu integration: ported ZeroMQ localization controls to Python sharktopoda client library
 - b. Planned YOLOv5 inference rerun on existing framegrabs to estimate prediction confidence
 - c. Integrated vars-localize with Raziel for VARS login; vars-gridview is next
2. Brian Schlining
 - a. Discussions on NOAA's statement of work agreement to host external group's image collections for FathomNet.

Week 2

1. Kevin Barnard
 - a. Started preparing materials for project update and workshop
 - b. Looking into better workflow to accelerate process of updating exemplary images in VARS KB (images that show up in DSG for a particular concept)