HAAG Weekly Report Week 10

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Time-Log

What did you do this week?

- o Continued to create features in the frontend
- o Updated website

What are you going to do next week

- o Keep website updated
- o Continue to chat with Bree about possible hosting options
- o Wait on Jon to get back to me about his current process

Blockers, things you want to flag, problems, etc.

- o None

Abstracts:

FathomGPT: A Natural Language Interface for Interactively Exploring Ocean Science Data

We introduce FathomGPT, an open source system for the interactive investigation of ocean science data via a natural language interface. FathomGPT was developed in close collaboration with marine scientists to enable researchers to explore and analyze the FathomNet image database. FathomGPT provides a custom information retrieval pipeline that leverages OpenAI's large language models to enable: the creation of complex queries to retrieve images, taxonomic information, and scientific measurements; mapping common names and morphological features to scientific names; generating interactive charts on demand; and searching by image or specified patterns within an image. In designing FathomGPT, particular emphasis was placed on enhancing the user's experience by facilitating free-form exploration and optimizing response times. We present an architectural overview and implementation details of FathomGPT, along with a series of ablation studies that demonstrate the effectiveness of our approach to name resolution, fne tuning, and prompt modification. We also present usage scenarios of interactive data exploration sessions and document feedback from ocean scientists and machine learning experts.

Summary: FathomNet is a database that currently hosts a rich amount of information that is only accessible with some knowledge of data sharing, machine learning. The authors created FathomGPT to allow more users to interact with this database.

What did you do and prove it

This week I worked on fixing the frontend of the app. I am still working with hardcoded values but feel that I am in a place to start adding backend. I fixed the svg so that it is an appropriate size for the screen. Before it was the image size and I couldn't figure out how to scale the scatterplot values. I also had trouble with being able to move points. Now I have appropriately scaled points and the ability to move them.

Next, I would like to start getting and retrieving values from the backend. I can make the scatterplot values and the images go from the backend to the frontend but now I need to the updated values to go from the frontend to the backend. Lastly, I need to have the ability to download the updated tps file values. Below is the current state of the front end, notice the point that is not on the lizard, this was dragged to show functionality.

Upload an Image

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