HAAG Weekly Report Week 9

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Time-Log

What did you do this week?

- Created a new demo app in d3
- Updated website
- Interviewed our user about possible features for the app

What are you going to do next week

- Keep website updated
- Find out about GeorgiaTech website hosting services
- Make demo be able to change points user would like
- Ask Jon to let me watch his current process so i can make the app look the same

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

- None

Abstracts:

Link: https://dl.acm.org/doi/pdf/10.1145/3313831.3376846

Unwind: Interactive Fish Straightening

The ScanAllFish project is a large-scale effort to scan all the world's 33,100 known species of fishes. It has already generated thousands of volumetric CT scans of fish species which are available on open access platforms such as the Open Science Framework. To achieve a scanning rate required for a project of this magnitude, many specimens are grouped together into a single tube and scanned all at once. The resulting data contain many fish which are often bent and twisted to fit into the scanner. Our system, Unwind, is a novel interactive visualization and processing tool which extracts, unbends, and untwists volumetric images of fish with minimal user interaction. Our approach enables scientists to interactively unwarp these volumes to remove the undesired torque and bending using a piecewise-linear skeleton extracted by averaging isosurfaces of a harmonic function connecting the head and tail of each fish. The result is a volumetric dataset of a individual, straight fish in a canonical pose defined by the marine biologist expert user. We have developed Unwind in collaboration with a team of marine biologists: Our system has been deployed in their labs, and is presently being used for dataset construction, biomechanical analysis, and the generation of figures for scientific publication.

Summary: This group created the application Unwind that allows biologists to remove unwanted distortions from volumetric images of fish. The group used 10 users to evaluate their product.

What did you do and prove it

I built on my demo app from last week and was able to get zoom controls and a satisfactory interactive plot with the image of the lizard as well as the scatterplot points. My next step is creating the ability to move the scatterplot points and connect it with the backend. I would like to see what our user's set up is for currently landmarking the lizards so I can make our app look very similar. I also would like to find a server to host the app, so that Jon can try the app soon. This is a picture of the zoom working well inside the demo app. The ability to zoom in this close will be very useful.

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