

CSE 583 Final Project

Fish EEG

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Final Project Presentation

Teams will present their projects using slides in 7 minute oral presentation. The presentation should include:

- Background. Describe the problem or area being addressed.
- Data used. What data did you use? How was it obtained? What are its limitations?
- Use cases. How users will interact with your system in a way that addresses the problem area.
- Demo. Demonstrate your software.
- Design. Describe the components and how they interact to accomplish the use cases.
- Project Structure. Show the structure of your GitHub repository.
- Lessons learned and future work. Focus on software engineering lessons.

You should post a PDF of your presentation in the docs folder of your project.

Grading Rubric

Projects will be evaluated based on the following criteria:

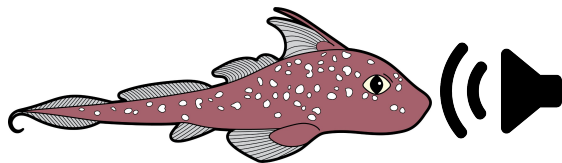
- Organized as described in the section on project structure
- Quality of the design documentation (especially the functional specification and design specification)
- Uses at least two data sources
- Code quality, especially consistent coding standard (e.g., pylint or ruff).
- Quality of docstrings (both module level and function level) throughout the code.
- Test coverage
- Quality of the example of using the package (in the examples folder of the project repository)
- Implements continuous integration (e.g., via github actions) with tests and linting and all tests pass.
- Completeness and functionality of the pyproject.toml (package is installable, dependencies are specified).
- Creativity and technical challenge

Background

Goal

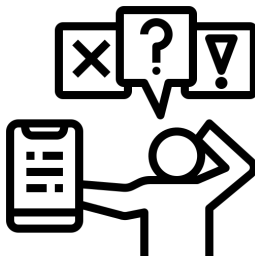
What sound can
spotted ratfish hear?

How can we best
share results?



Challenge

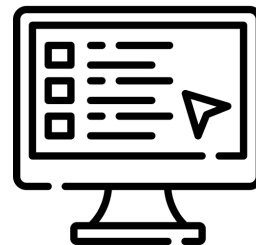
Unique data analysis
and data display
method needed



Solution

Develop unique data
analysis pipeline

Create interactive
website



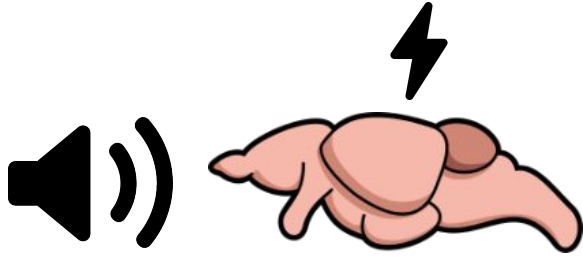
Use Cases: Two Examples



	1. Analyzing EEG Data	2. Curious Friend Exploring Results
Goal		
Expected Interactions		

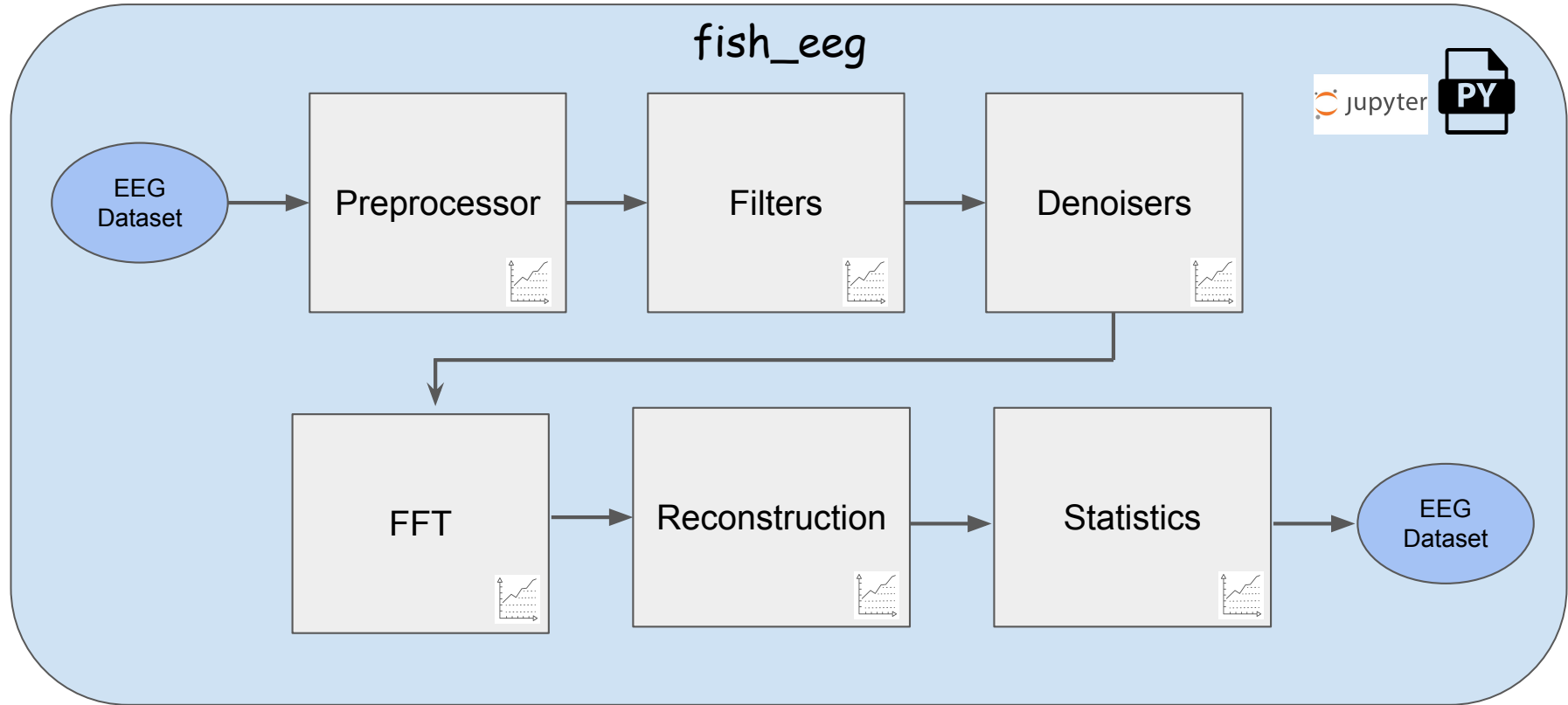
Data Used

Measure in lab



4-channel EEG signals

Design & Project Structure




Search the dashboard... (Press / to focus)

Search

Welcome to the Fish Auditory EEG Dashboard

Explore our project sections using the menu above.

 [Start Guided Tour \(Recommended for First-Time Visitors\)](#)

Quick Start by Role

Researcher / Collaborator

Want to analyze your own EEG data?

[Start with Installation →](#)

Principal Investigator

Reviewing methods and results?

[View Overview →](#) | [See Results →](#)

Curious Friend / Educator

Want to learn about fish hearing?

[Why This Matters →](#) | [Interactive Charts →](#)

Data Analyst / Developer

Need the code and architecture?

[View Pipeline →](#) | [Download Data →](#)

Project Overview

Background, goals, and key parameters of the auditory EEG analysis pipeline.

Analysis Pipeline

Step-by-step breakdown of the data processing and analysis workflow.

Visual Summaries

Interactive charts and summary statistics from the analysis results.

Team & Course

Meet the project team and see course information and acknowledgments.

Repository Info

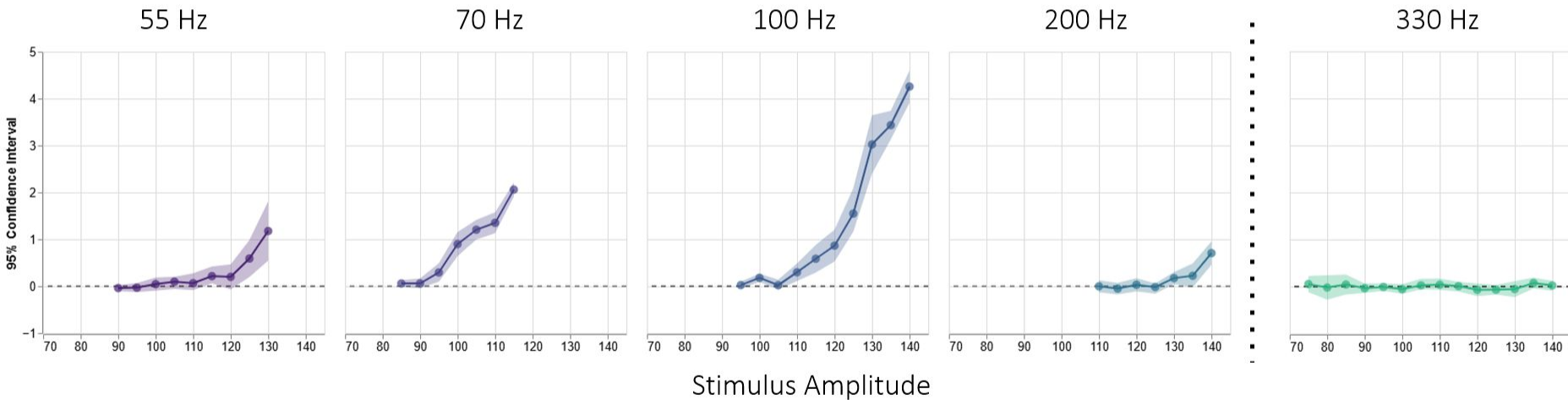
Installation guide, downloadable resources, and software architecture details.



© 2025 Fish Auditory EEG Dashboard. Data citation: Hunsaker, A., Brown, A., Sineros, J., James, M., Tritt, C., Sonthalia, Y. (2025). Fish Auditory EEG Analysis Dataset. University of Washington. https://github.com/aolh-uow/fish_eeg

Thank you to the Spotted Ratfish

So what can they hear?



Basically 200 Hz and below!

G3



Lessons Learned

GitHub is Difficult!

GitHub is incredibly frustrating at times. The class unit on GitHub was instrumental, but even still there were hiccups. Important to be adept at git.

Continuous Integration

Testing is a delicate thing. When the repo gets updated, tests can break and it can be challenging to find out why. Continuous Integration requires a detailed structure at every level.

GitHub Branches

GitHub branches are key. Being able to commit to your branch then using pull requests helps strengthen the teams code.

Vision is Key

Having a clear vision from the start was effective in understanding what needed to be done. Helped curb meandering.

End of presentation

References

Ratfish PNGs: <https://nwdiveclub.com/viewtopic.php?t=9519>, modified by Christopher Tritt

