PSGY4009

Q+A about assessment, the GLM in more detail

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Today

Assessment

- A bit more detail on the written assessment
- General advice on writing, structure

The General Linear Model (GLM)

- intuition / non-mathematical explanation
- some of the nitty-gritty (in `matlab`)
- demo in `fsl`

Learning objectives

By the end of the lecture you should:

- know what's expected in coursework
- have all the information to get started on assessment
- understand the GLM in principle
- appreciate some of the technical details of GLM analysis

Assessment

- Written assignment (max 3000 words) including a 250 word abstract.
- Details on moodle (2022/23).

The written assignment for this module is an essay about how functional magnetic resonance imaging and/or brain stimulation can be used to study different neuroscience questions. It must cover at least two topics and/or methods from the course.

Not just a literature review

One aim of the assignment is to make you think about the methodological choices the experimenters have to make. After a brief summary of the state of the literature in your area, there should be therefore be a component that talks about how you might extend some previous findings.

On moodle

There are some suggestions for how you can tackle each section in turn

overall word limit, 3000w - stick to this limit)

- Abstract (maximum 250 words. **stick to this limit**)
- Introduction (suggested ~500-750 words)
- Proposed experiment + methods (suggested ~500-1000 words)
- Expected results (suggested ~250 words)
- Conclusion / Discussion (suggested ~500-1000 words)
- References / Citations (no word limit)

Clear writing

Content

The **content** of your coursework is (obviously) important - topic choice - methodological details included - facts correct?

... but writing!

- clear, concise, economic
- line of argument?
- structure easy to follow
- ...

Strunk & White - *Elements of Style*

If you haven't read this little book (26 pages), take the time!

free online PDF of the book

The GLM - a quick walk-through

Some notes for my demo

```
cd ~/projects/hands-on-brain-data
julia
# using Pluto
# Pluto.run()
# "what_is_linearReg.jl"
```

in `matlab`

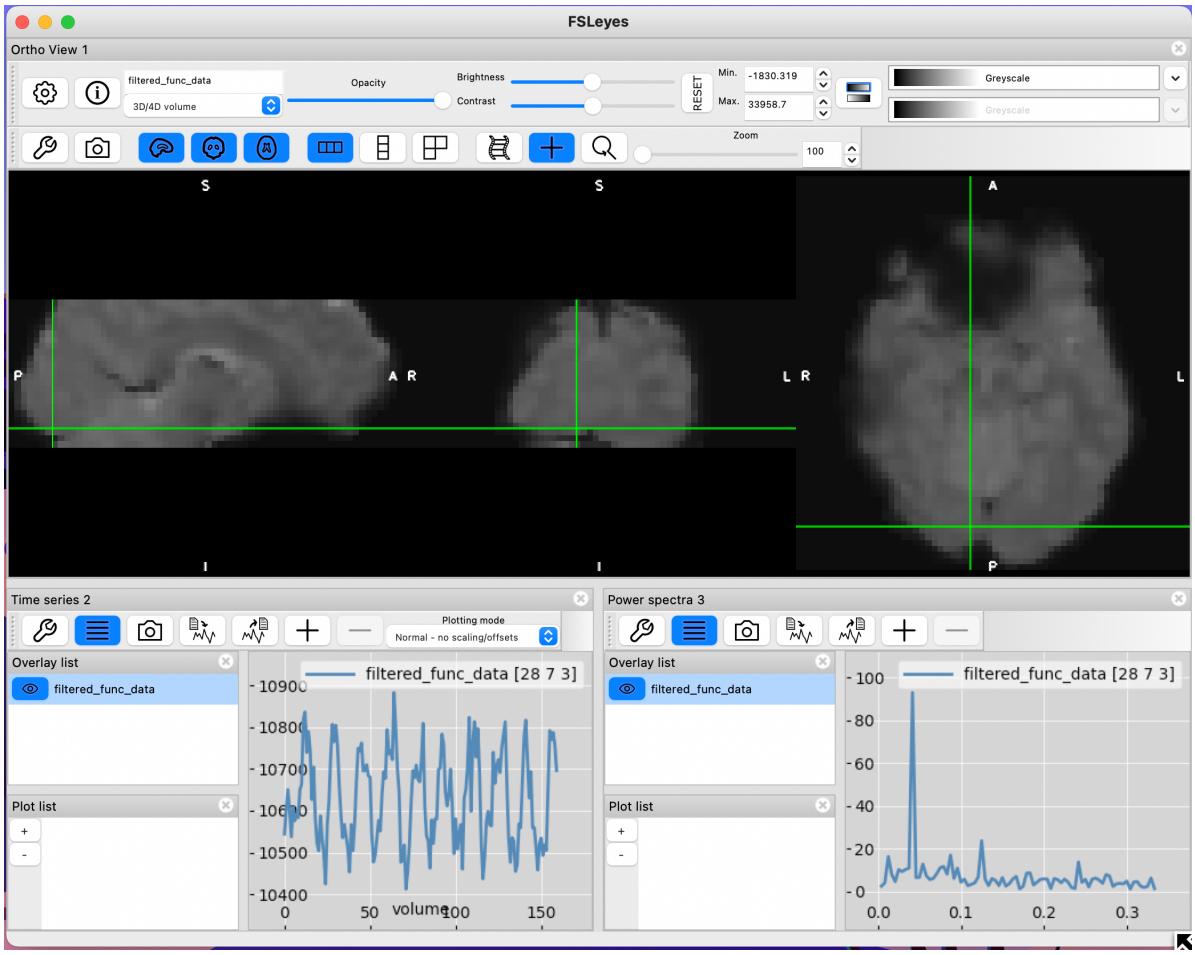
Some notes for my demo

```
cd ~/projects/hands-on-brain-data
cd data
X = load('design-3.txt')
y = load('timecourse.txt')
X\y
% regress(), pinv()
```

in `fsl`

```
cd ~/projects/hands-on-brain-data
cd data
fsleyes filtered_func_data
fsl &
# simple block design ... stats: 6, (12, 12, 12)
```

in `fsl/fsleyes`



Hope you found this helpful.

See you soon!

Colophon

- This presentation was made with `quarto` and `revealjs`.
- Uses a font called `Atkinson Hyperlegible`, which was designed to work better for people with low vision: available via google fonts.