Neuroscientific Data Analysis in Python

What is your background?

- Biology
- Psychology
- Other

Programming experience

- I have taken a course in one language and know what a for loop is.
- I have used programming in my work before.
- I have never taken a programming course.

Did you install Python?

- If not, download it from https://www.anaconda.com/download and install it. We can help you.

- For the first four exercise sheets this week (excluding the exercises on plotting), you can also run python and the notebooks online via this link: https://mybinder.org/v2/gh/janclemenslab/neu715/HEAD

Neuroscientific Data Analysis in Python **Schedule**

- Week 1 - python basics: variables (numbers, strings, lists), control flow (loops, if-then), plotting (matplotlib)

- Week 2 - more python basics: complex variable types (dictionaries, sets, tuples), handling errors (imports), using external code (functions, imports)

- Week 3 - handling files and numerical computing (numpy)

- Week 4 - descriptive and inferential statistics (scipy.stats)

- Week 5 - handling tabular data (pandas, connectomics); curve fitting

- Week 6 - handling video and behavioral data

- Week 7 - finishing assignments

Neuroscientific Data Analysis in Python
Organization

- W04 1-171, W16A, Monday-Thursday 14:00-16:00
- Lectures and exercises will be streamed on bbb - check StudIP for the link.
- Lecture, exercise and assignment materials are on StudIP. Lectures and exercises can also be found here: https://janclemenslab.org/neu715.
- In the first two weeks, each session will consist of lectures (first 45 minutes) and exercises (rest of the session). Later, each week will have lectures on Monday and Wednesday, exercises on Tuesday and Thursday.
- **Grading:** The final grade is determined by combining scores from weekly assignments. Assignments in the first three weeks will be pass/no-pass without a grade. Assignments 4-7 will graded. The assignments consist of programming, analysis, and interpretation tasks.