



Radboud University



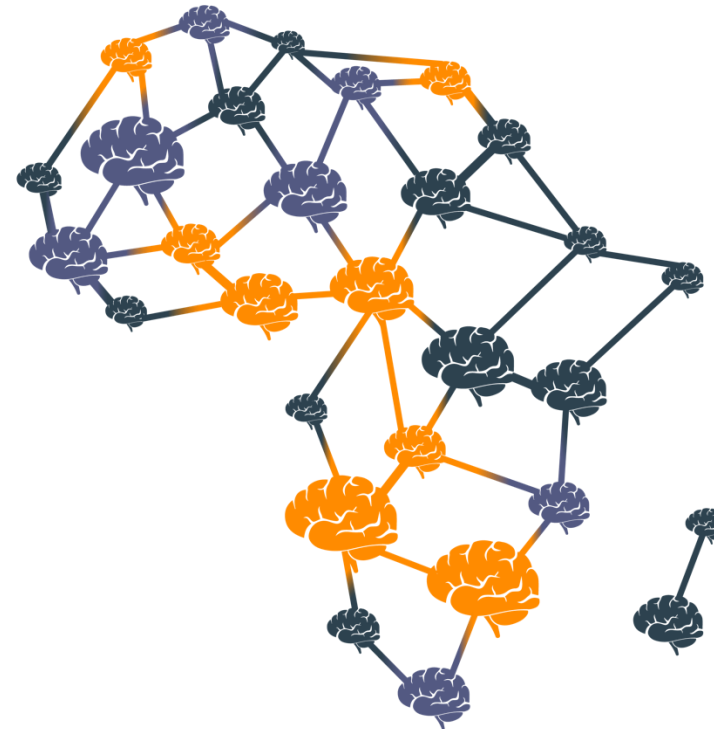
University of  
Copenhagen



# What software to use for EEG analysis

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9-14 June 2025  
Port Harcourt, Nigeria



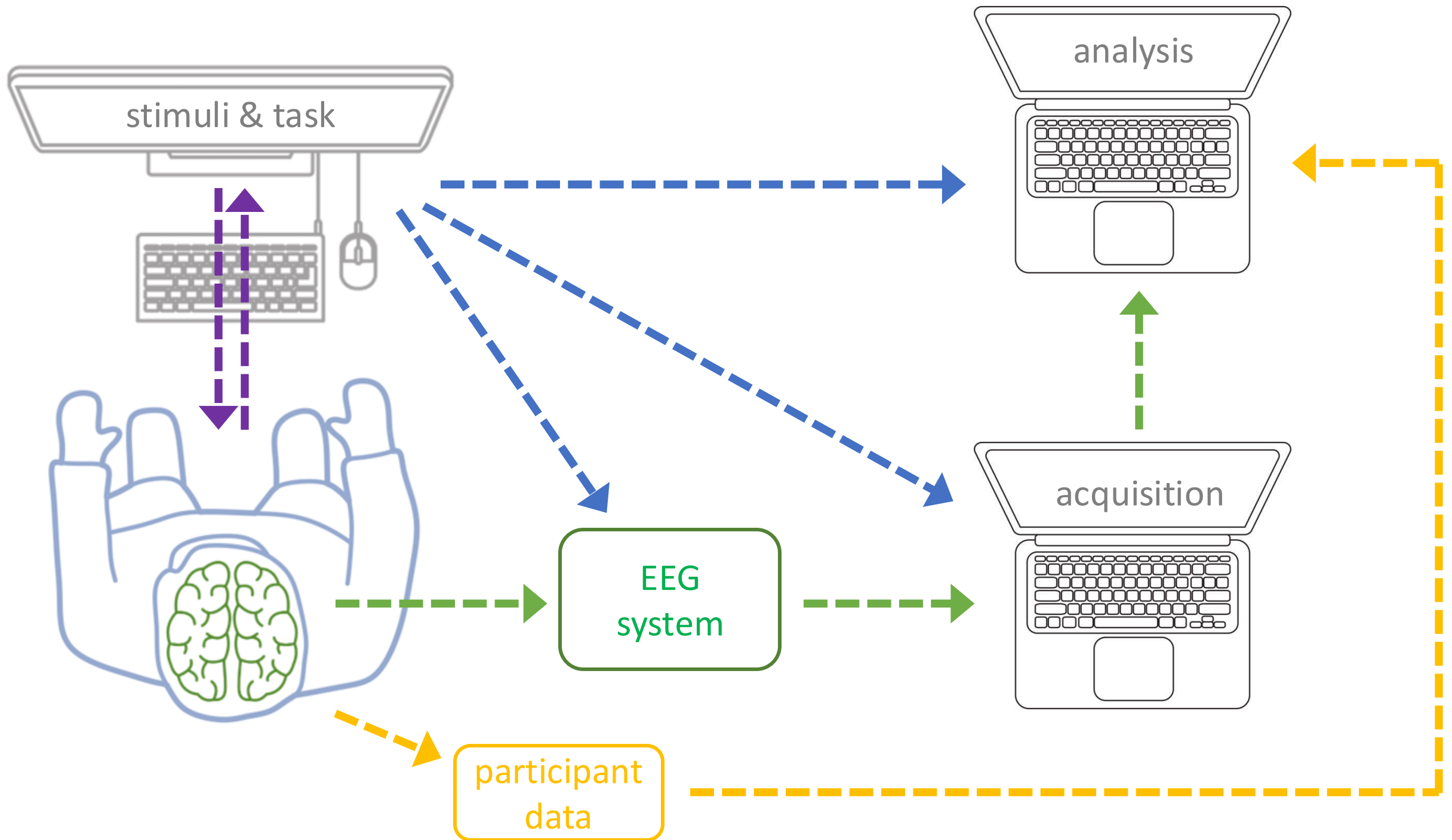
**African  
Brain  
Data  
Network**

# Outline and topics to cover

What software to use

What kind of computer to use

How to organize and archive your data and scripts



# EEG acquisition software

Often comes with the EEG system, no usually not much choice.

The acquisition software writes the data (and triggers/margers) to its own file format.

After acquisition you may want to convert the data from the original format to a more open format.

European Data Format (EDF)

BrainVision Core file format (also used by BrainVision Analyzer, hence BVA)

\*.vhdr, \*.vmrk, \*.eeg

Brain Imaging Data structure (BIDS)

# EEG analysis software

Sometimes it comes with the EEG system, usually not that flexible.

Software for clinical evaluation of epilepsy and sleep, for “reading” the EEG.

## Commercial software

- BrainVision Analyzer (BVA)

- BESA

- Curry

- ASA

Academic open source software for research

# Academic open source software for EEG research

## MATLAB-based

|            |                                                                                           |
|------------|-------------------------------------------------------------------------------------------|
| FieldTrip  | <a href="https://www.fieldtriptoolbox.org">https://www.fieldtriptoolbox.org</a>           |
| EEGLAB     | <a href="https://eeglab.org">https://eeglab.org</a>                                       |
| BrainStorm | <a href="https://neuroimage.usc.edu/brainstorm">https://neuroimage.usc.edu/brainstorm</a> |
| SPM        | <a href="https://www.fil.ion.ucl.ac.uk/spm/">https://www.fil.ion.ucl.ac.uk/spm/</a>       |

## Python-based

|            |                                                     |
|------------|-----------------------------------------------------|
| MNE-Python | <a href="https://mne.tools/">https://mne.tools/</a> |
|------------|-----------------------------------------------------|

EEGLAB, BrainStorm and SPM have a graphical user interface.

The MATLAB-based software can also largely (but not completely) run with Octave, a free and open source MATLAB alternative.

# Academic open source software for EEG research

Some are easy to learn, but have limited functionality.

Some are harder to learn, but have more functionality.

Some are good for beginners, some for advanced users.

MATLAB is a programming language and data analysis environment with a syntax that is very close to that of mathematics. The basic object is a matrix, and it has functions and scripts.

With MATLAB you can make graphical user interfaces (GUIs), but also code your analysis in a “script” (a set of instructions).



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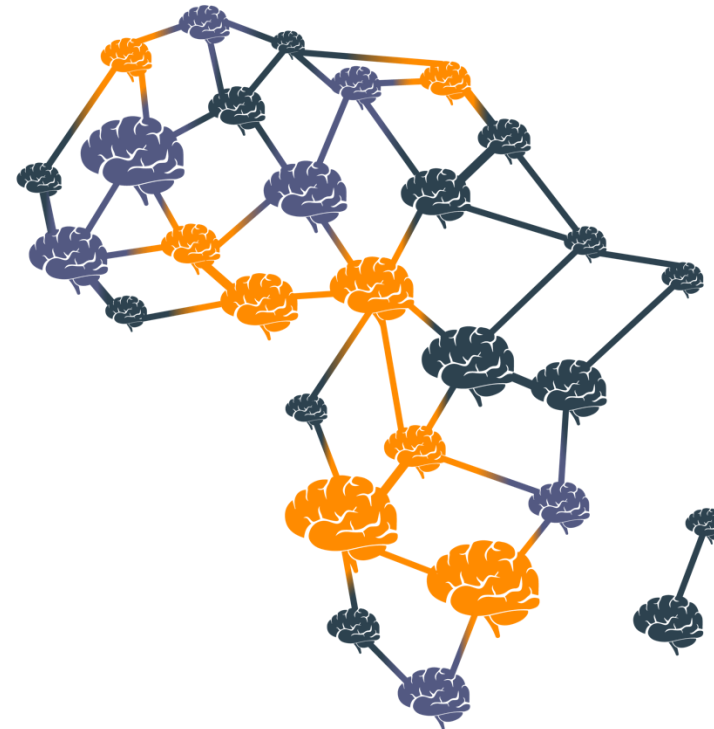
NatMEG



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