

Stimulus delivery for neuroscience: a PsychoPy course.

This is a three-day course on stimulus delivery for neuroscience and the PsychoPy software in particular. The course will go through the basics of precise stimulus delivery and how to do it using PsychoPy. We'll code experiments although we will briefly touch the graphical interface, just for fun. Hooking up to M/EEG and fMRI will be covered although we won't actually do it in this course.

PsychoPy (see <http://psychopy.org>) is a very powerful alternative to Presentation, E-Prime, Cogent, PsychToolbox and the like. It is free, it is cross-platform (windows, mac, linux) and it is open source. In short, it gives you all the flexibility you could ever want and it WILL make your life easier!

After the course, you should be able to design your own cool neuroscience experiments without committing rookie mistakes.

Facts

When: january 6th-8th, 9:00 to 16:00. Lunch break from 12:00 to 13:00.

Where: Danish Neuroscience Center, 5th floor. Nørrebrogade 44, building 10G.

Teacher: Jonas Lindeløv, jonas@cnru.dk

Organized by MINDLab. The course is free of charge. No ECTS credits will be awarded.

Targeted audience

This course is for people who are familiar with computerized experiments (knows terms like trial, block, fixation cross, reaction time etc.) and who know basic programming. If you can answer the following question within 3 minutes with just a few hits on google, you should be good. If not, you will have a hard time following the course.

Without actually running this python script, what will the last line (*print result*) give you?

```
# Generate a sequence of numbers.
trials = range(2, 6)

# Give "result" a new value
result = 0
for i in trials:
    if i != 3 and i < 5:
        result += i

print result
```

Preliminary course schedule

Monday January 6th: we'll go through the basics of Python programming (syntax, objects, modules) before lunch. After lunch we'll look at the graphical interfaces for designing experiments, namely PsychoPy Builder and OpenSesame. You can skip these sessions if you know your way around python or if you are not interested in the graphical interfaces.

Tuesday, January 7th: we will go through the basics of precise stimulus delivery and how to do this using PsychoPy. Timing, consistency, monitors and graphics cards, audio cards and triggers to/from external equipment.

Wednesday, January 8th: we will embed the stimulus delivery in an experiment. Trials, blocks, logging, collecting (and reacting to) responses etc. And then finish off with some cool stuff to

impress and inspire you!

Preparing for the course

Go to <http://lindeloev.net/psychopy-course/> and follow instructions. Basically it tells you to install psychopy (and optionally OpenSesame) and make sure that you can follow a few basic tutorials. It should take less than an hour for experienced programmers but maybe a few hours for the less experienced. You will need this to follow the course as we'll start off assuming that you have everything installed and know basic programming logic.

You need to bring your laptop every day.