NEUROSCIENCES

NEUROGRAD+ SUMMER SCHOOL

Web-based technologies for cognitive science

For last-year bachelor and master students

6th - 9th July 2026

Lyon, France

More info: **neurograduate.univ-lyon1.fr/summerschool/**

Application deadline: **15th of April 2026**

Day 1 – 6th of July 2026

Open cognitive science & online behavioural testing

- *08h30-09h00* | Registration and coffee break

- *09h00-09h15* | Welcoming words by the organizers and general introduction
- *09h15-11h15* | **Lectures**. **Introduction to open cognitive science**.

  09h15- 09h45 | What lies ahead: the long road from ideas to publication

  09h45-10h15 | Statistical designs & power calculation

  10h15-10h30 | Break

  10h30-11h15 | Experimental designs in the lab and online

- *11h30-12h30* | Flash-talks by participants

- *12h30-14h00* | Lunch with speakers

- *14h00-18h30* | **Practical session**. **Deploying behavioural experiment**
  - Essential Git commands for version control
  - Virtual environments for Python and Javascript
  - Key principles and implementation of web programming using HTML and Javascript
  - Setting up a web-server to serve a behavioural task using jsPsych and Express.js

Day 2 - 7th of July 2026

Doing more with more data

- *09h00-11h15* | **Lectures**. **Large scale online experiments & gamified tasks**

  09h00-09h30 | Gamifying experiments for emotional engagement

  09h30-10h00 | Turning an experiment into an actual game for smartphone

  10h00-10h15 | Break

  10h15-10h45 | Seahero quest: a serious game success story

  10h45-11h15 | The EXPLAIN project: cognitive science in the era of Big Data

- *11h30-12h30* | Flash-talks by local PhD students

- *12h30-14h00* | Lunch with speakers and local students

- *14h00-18h30* | **Practical session**. **Accessing, preprocessing and analyzing online data**
  - Getting familiar with Numpy and Pandas
  - Preprocessing and sanity checks
  - Plotting data with Seaborn
  - Frequentist statistics using Pingouin

- *19h00-...* | Social event with students and speakers near the River Rhône.

Day 3 - 8th of July 2026

Emerging approaches for clinical applications

- *09h30-11h45* | **Lectures. Introduction to computational psychiatry**

  09h30-10h00 | Towards a better integration of cognitive and emotional measures

  10h00-10h30 | Relevance of metacognition for clinical applications

  10h30-10h45 | Break

  10h45-11h15 | Model-based assessment of mood fluctuations at different timescales

  11h15-11h45 | Inference and adaptation in psychiatric conditions

- *12h00-12h30* | **Practical session**. **Wrapping up**
  - How to make the most out of the material used throughout the school

- *12h30-14h00* | Lunch with speakers

- *14h00-15h30* | **Lectures**. **Virtual Reality (VR) for cognitive science**

  14h00-14h30 | Using VR to better understand ADHD mechanisms in children

  14h30-15h00 | Embodied cognition and peripersonal spaces in VR

- *15h30-17h00* | **Neuro-immersion (VR) platform visit** at Impact.

- *18h00-...* | **Art-science event**

Day 4 - 9th of July 2026 (bonus day)

Computational behavioural modeling

- *09h30-15h30* | **Lectures**. **Computational models of behaviour**
- *09h30-10h00* | Principles of statistical optimization and their application to behavioural modelling
- *10h00-10h30* | Making models sound: simulations, recovery and sanity checks
- *10h30-10h45* | **Break**
- *10h45-11h15* | Behavioural learning: From associative learning to reinforcement learning
- *11h30-12h30* | Flash-talks by local PhD students
- *12h30-14h00* | Lunch with speakers and local students
- *14h00-18h30*. **Practical session**. **Fitting and validating behavioural models**
    - Simulating the task using different reinforcement-learning models
    - Model fitting & model validation
    - Making sense of model comparisons

More information

Scope and format of the event

The Neurograd+ 2026 Summer School is focused on familiarization with essential skills, common techniques and emerging concepts in cognitive neurosciences, with a focus on computation, multimodality and ecological relevance. The program includes talks, practical sessions, visits, complimentary meals and social activities.

Preparatory material and short tutorials will be shared with the selected students to make the best out of the practical sessions. The goal of these sessions is dual: familiarize students with the main concepts and operations required to perform a cognitive neuroscience experiment and provide them with clean boilerplate scripts & functions to start their future projects in the best conditions.

This event is entirely free thanks to generous funding from the SFRI program. We will select 12-16 students (about 50% international) based on their CV and their letter of interest.

All communications are in English.

Eligibility

General prerequisite: students who just completed or are about to complete their master and who wish to embrace a research career in cognitive science, cognitive neuroscience, experimental psychology or computational psychiatry.

The selection committee will favor candidates whose scientific interests and/or ongoing projects align with the scope of the school. Basic knowledge in computer programming is required.

We are committed to fostering an international, inclusive and welcoming environment for all participants.

Neurograduate Summer School Travel grants

We may award up to 7 travel grants to non-local students, covering accommodation and transportation.

The awarded candidates will be housed in a studio residence or in a hotel located between the Neurocampus and the city center of Lyon.