Université Paris-Saclay
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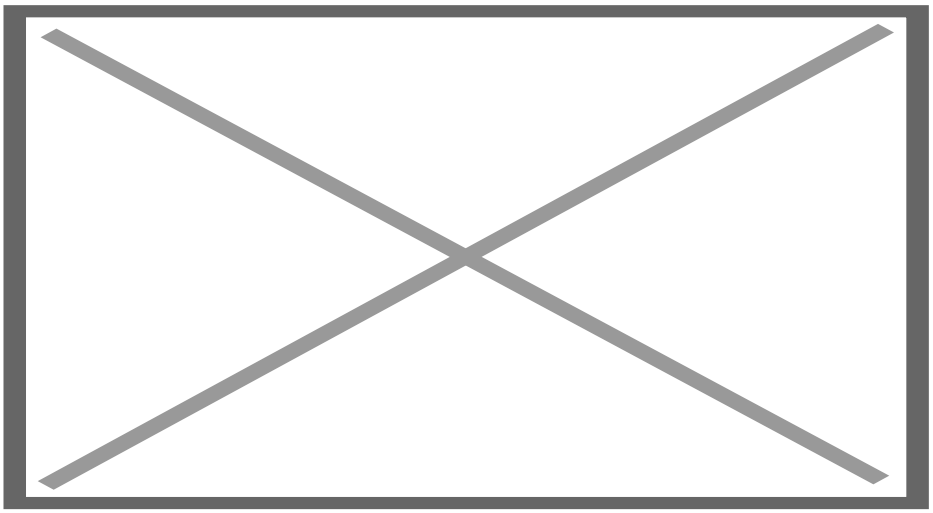
M2 Computational Neurosciences and Neuroengineering

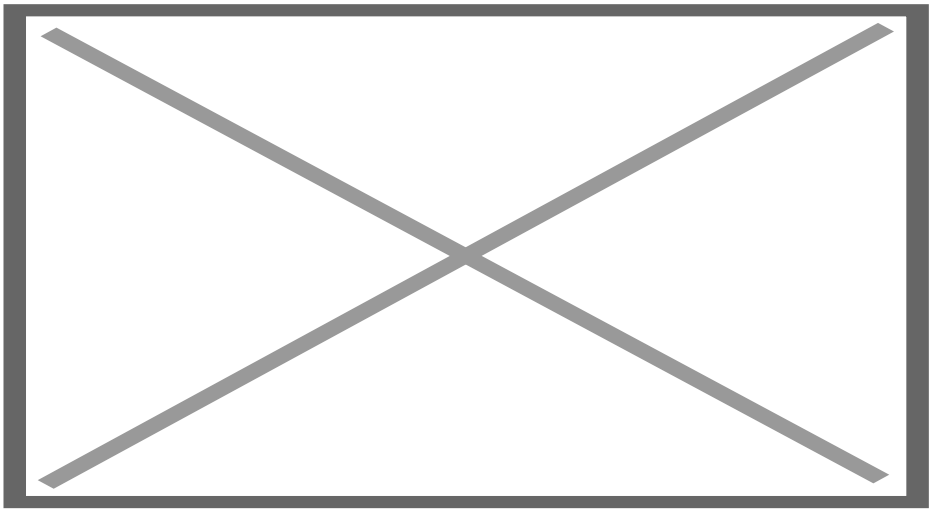
Master's degree
Specialisation Neurosciences
Enrolment type
Formation initiale
Formation continue
Language(s) of instruction
English

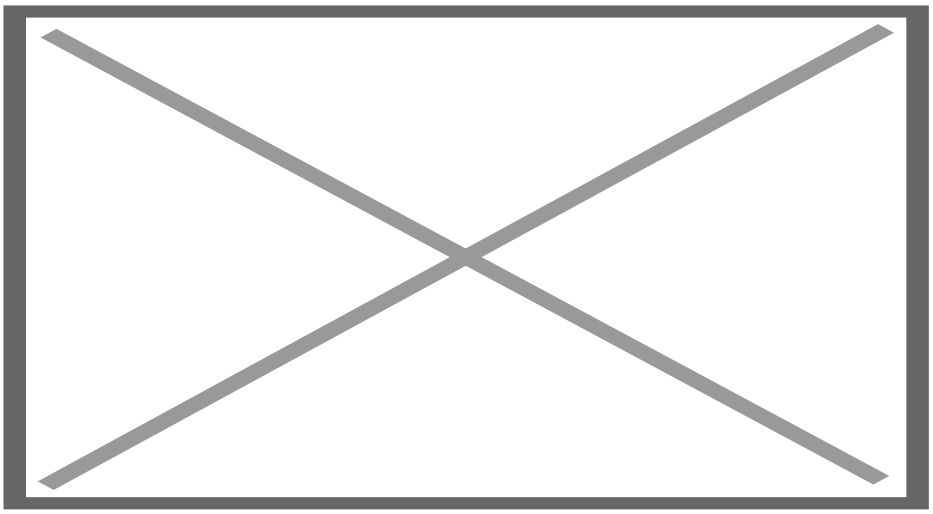
One of the greatest challenges of modern science is to understand how the brain processes information — both to replicate its computing and learning capabilities (as in Artificial Intelligence, neuromorphic circuits, and machine learning) and to compensate for its dysfunctions using computational and technological tools (such as Closed-Loop Neuroscience and Brain-Computer Interfaces). These goals are at the core of the M2 Computational Neuroscience and Neuroengineering track.

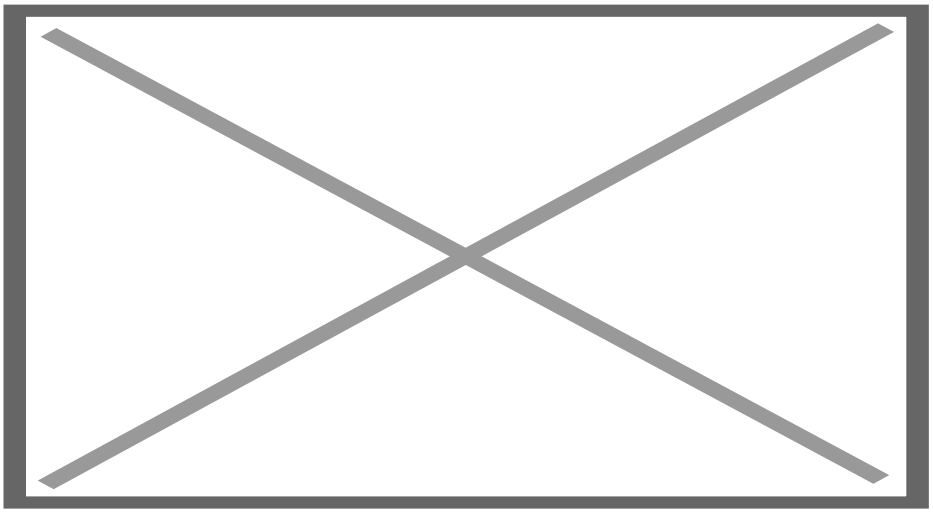
The Master's programme is divided into two semesters, the first of which consists of six teaching units and a supervised project. The second semester is devoted to a 5-6 month internship.

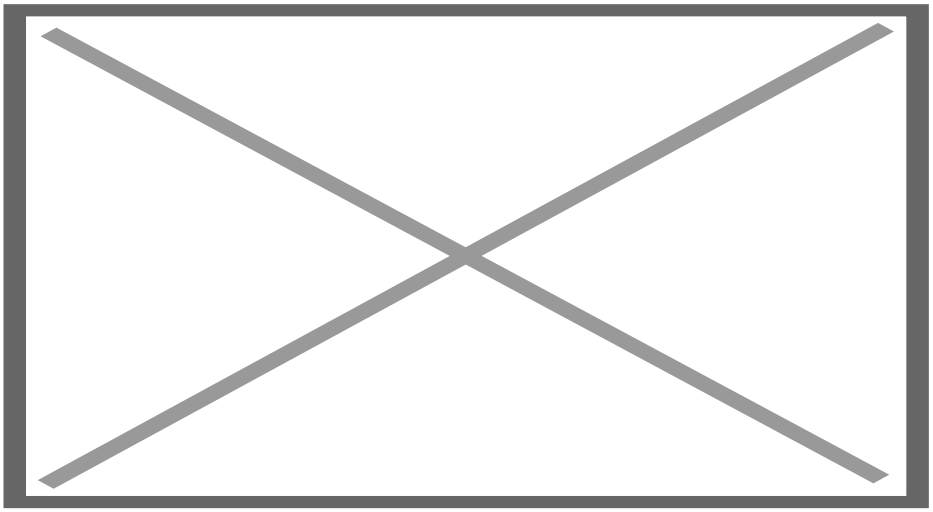
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Information

- Overview
- Application requirements
- Schedule

Présentation

Skills

To use adequate models, methods, experiments and technological tools. Students have access to a unique interdisciplinary training, enhancing their skills in research, analysis and scientific presentation and developing their ability to work as part of a multidisciplinary team.

Objectives

The Computational Neuroscience and Neuro-engineering Master aims to train students to face problems raised by brain perception, processing and transmission of information. The training program is based on experimental, computational and theoretical approaches, combining neurosciences, physics, applied mathematics and computer sciences at different scales (cell, network, behaviour) and different organizational levels (micro, meso and macroscopic scales).Thanks to the reputation of the laboratories and research teams involved, the Master degree offers a very high level courses programme with a high international visibility. The target of this Master program is to present the concepts, technological achievements, methodological approaches and research challenges in computational neurosciences and neuroengineering. It also aims to raise students' awareness of the theoretical, experimental, applicative, entrepreneurial and ethical themes of Neurosciences using the concepts of Physics and Engineering Sciences. The CNN Master's degree trains future engineers, researchers and lecturers specialized in Computational Neurosciences and Neuroengineering with an interdisciplinary culture and approaches ranging from theory to experimentation by combining computational methodologies. Engineer jobs and Phd projects in academic, industrial laboratories, integration in R-D departments in France or abroad, represent the main opportunities. The CNN

Master courses programme targets students with a range of backgrounds, including Life Sciences, Computing Science, Mathematics, Physics and Engineering. One part of the courses is focused on the theoretical approaches and the remainder is focused on a research project. Student will achieve the CNN Master with his own skills and interests. During the first semester, lectures such as the physiological bases of neurosciences, the neural bases of perception, the techniques for measuring and stimulating neural activity, the processing and analysis of neural signals, the dynamic systems in neuroscience, will provide the necessary tools to understand the complex phenomena involved in processing and transmitting information in the brain. A supervised scientific project will complete the students' training during the semester one. Semester two begins with a research internship of three to six months. This internship gives students real research experiences in computational neurosciences and neuroengineering. They will have the opportunity to work closely with a leading research team in the academic laboratories and opportunities will be created to work on industry lead projects. They will benefit from the supervision of experienced researchers. The project can be carried out with a research group at University Paris-Saclay, with an industrial partner or with a research institute in France or worldwide.

Débouchés

Career prospects

After a Master's + PhD: researcher or lecturer
Design engineer in the research / scientific sector
Design engineer industry / public research
Academic staff
Research and Innovation Manager
Research & Development Engineer
Research or Design Engineer
Lecturer (after a PhD)

Further Study Opportunities

Master of Neurosciences
PhD
Research dissertation
PhD thesis
Engineering, research and development
train international specialists, producing competitive work within reputable teams from public scientific and technological institutions (EPST), in particular the French National Institute of Health and

Medical Research (Inserm) and French National Centre
fields of statistical learning, artificial intelligence and advanced data analysis
Data Scientist, Data Analyst, Ingénieur·e en Machine Learning dans des secteurs innovants (tech, finance, santé, énergie, etc.) ;
R&D researcher or data modelling and analysis expert in leading-edge companies or laboratories.

Admission

Admission Route

Computer Science
Mathematics
Physics
Life Sciences
Health sciences
Science and Technology
Engineering Sciences
Undergraduate double degree Mathematics - Physics

Capacity

Available Places

16

Target Audience and Entry Requirements

The Computational Neuroscience and Neuroengineering (CNN) Master's program is designed for students from diverse academic backgrounds, including life sciences, computer science, mathematics, physics, and engineering.

- Student with level equivalent to Master 1 or Master 2
- Student with level equivalent to engineer degree
- English level equivalent to B2 certification

Période(s) de candidature

Inception Platform

From 15/02/2026 to 30/06/2026

Supporting documents

Compulsory supporting documents

Copy diplomas.

Motivation letter.

Letter of recommendation or internship evaluation.

List of other masters requested (excluding Saclay).

All transcripts of the years / semesters validated since the high school diploma at the date of application.

Curriculum Vitae.

Fiche de renseignements.

Additional supporting documents

VAP file (obligatory for all persons requesting a valuation of the assets to enter the diploma).

Supporting documents :
- Residence permit stating the country of residence of the first country
- Or receipt of request stating the country of first asylum
- Or document from the UNHCR granting refugee status
- Or receipt of refugee status request delivered in France
- Or residence permit stating the refugee status delivered in France
- Or document stating subsidiary protection in France or abroad
- Or document stating temporary protection in France or abroad.

Details of the UEs taken for candidates outside the M1 Paris Saclay.

Programme

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	distan learn cour
Internship	30	Semestre 2							

Charger le détail

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	d l

Sensory systems and perception	3	Semester 1	25			
Charger le détail						
Machine learning	3	Semester 1	17		8	
Charger le détail						
Physiological bases of neuroscience	3	Semester 1	25			
Charger le détail						
Supervised project	12	Semester 1		50		
Charger le détail						
Closed loop neuroscience	3	Semester 1	25			
Charger le détail						
Manipulating and recording neuronal activity	3	Semester 1	13		12	
Charger le détail						
Dynamical systems and computational neuroscience	3	Semester 1	19		6	
Charger le détail						
Methods in cognition	3	Semester 1	2	9	9	
Charger le détail						
Human developmental cognitive neurosciences	3	Semester 1	16	4		
Charger le détail						

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	d l
Methods in cognition	3	Semester 1	2	9	9				

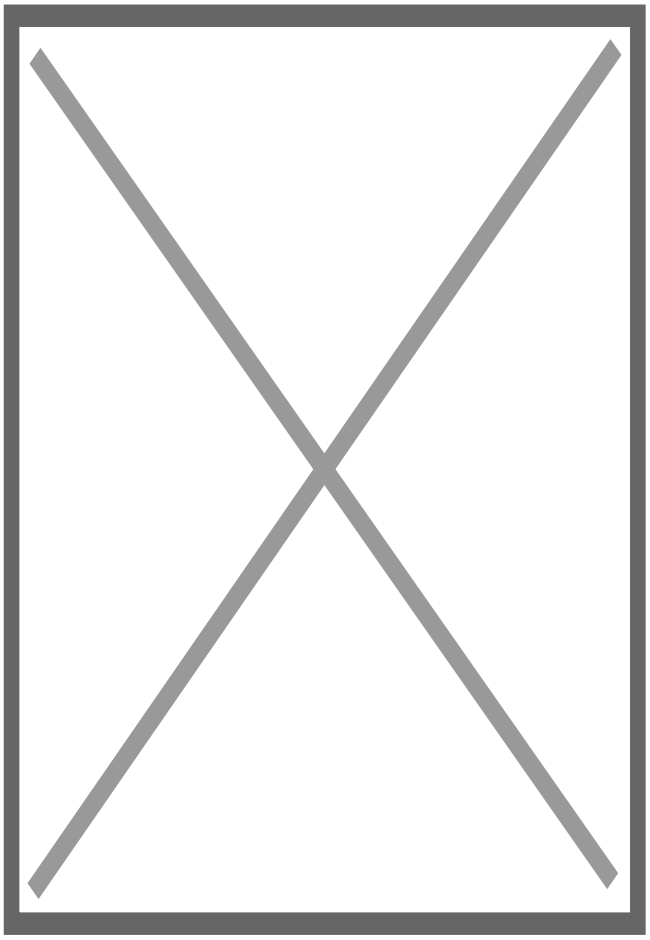
Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed	Lecture/practical	directed study/practical class	d l
Charger le détail									
Human developmental cognitive neurosciences	3	Semester 1	16	4					
Charger le détail									
Medical Image Processing	3	Semester 1	25						
Charger le détail									

Teaching Location(s)

SACLAY

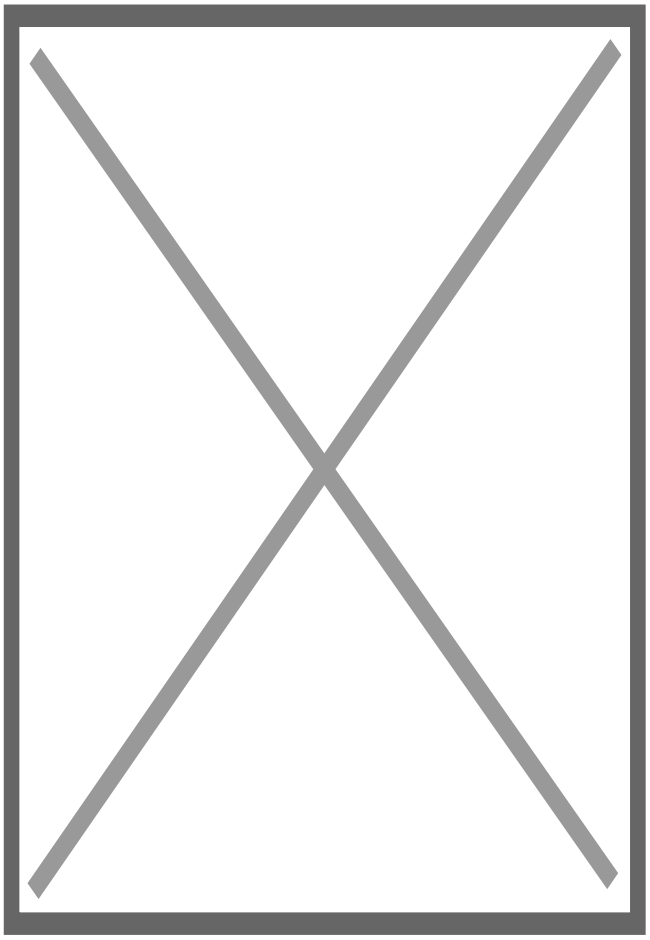
Training campus

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Orsay Bures

Orsay / Bures-sur-Yvette
Bus 4607, 4626
RER B Orsay ville ou Bures-sur-Yvette
Voir
Library
Community center



Saclay Moulon

Saclay / Gif-sur-Yvette / Orsay
Bus 4606 / 4609 / 4611 / 5154
RER B Le guichet
Voir
Student restaurant (CROUS)
Library
Sports facilities
Student residence

Contact

- **Sabir Jacquir**

  PR

http://www.universite-paris-saclay.fr/formation/master/neurosciences/m2-computational-neurosciences-and-neuroengineering