Université Paris-Saclay
Informatique et Sciences du Numérique
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Computer Science

Master's degree
Language(s) of instruction
English

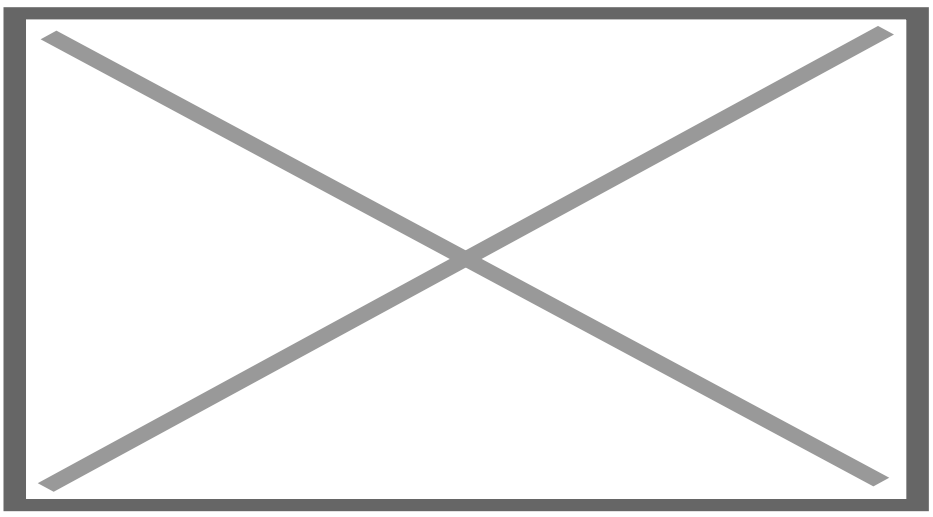
The Computer Science master delivers a top-tier scientific and technical education, blending academic rigor with a strong focus on industrial applications and research. Its rich diversity is showcased in 14 initial training tracks and 3 apprenticeship tracks, each exploring innovative and cutting-edge areas of the field.

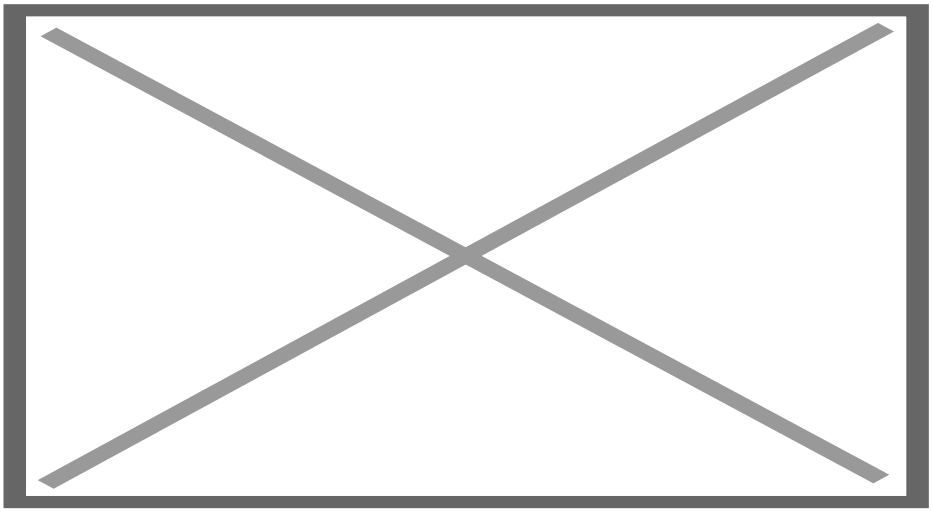
The Computer Science Master’s Program at the ISN Graduate School comprises 17 tracks, organized into five major thematic areas that are not mutually exclusive:

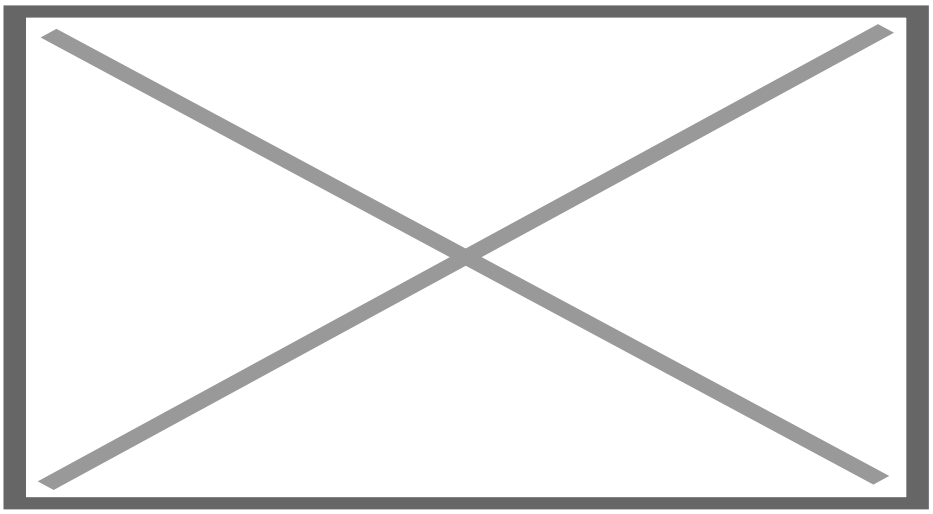
- Data Science, Big Data (4 M2 tracks)
- Systems, Networks, Security (6 M2 tracks)
- Algorithms, Theoretical Computer Science, Quantum Computing, HPC (5 M2 tracks)
- Human-Computer Interaction (1 M2 track)
- Teaching (1 M2 track)

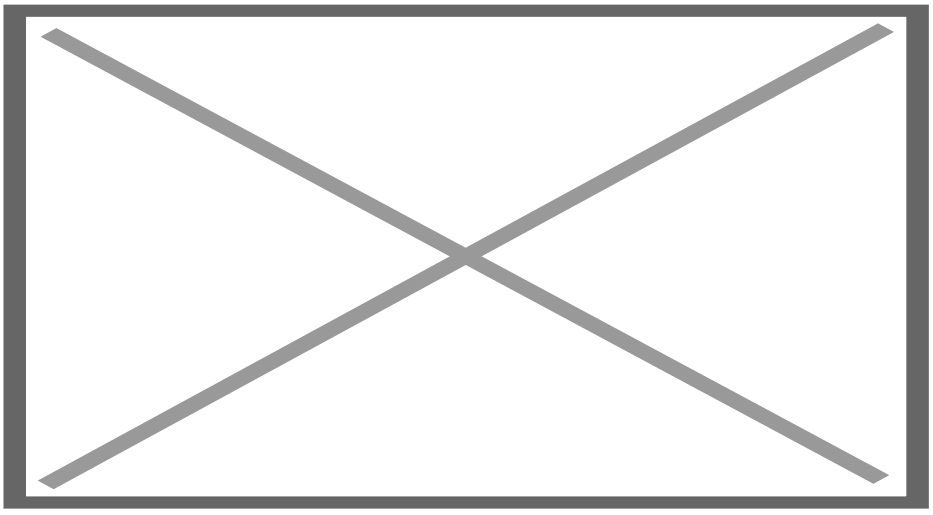
The Computer Science Master’s is designed to ensure a natural continuity between the first year (M1) and the second year (M2) of the same track. Subject to prerequisite validation by the program director, bridges exist between the different tracks and campuses, particularly between M1 and M2 within the same thematic area. Finally, most tracks are also open to external applicants, welcoming candidates from other academic backgrounds, both nationally and internationally.

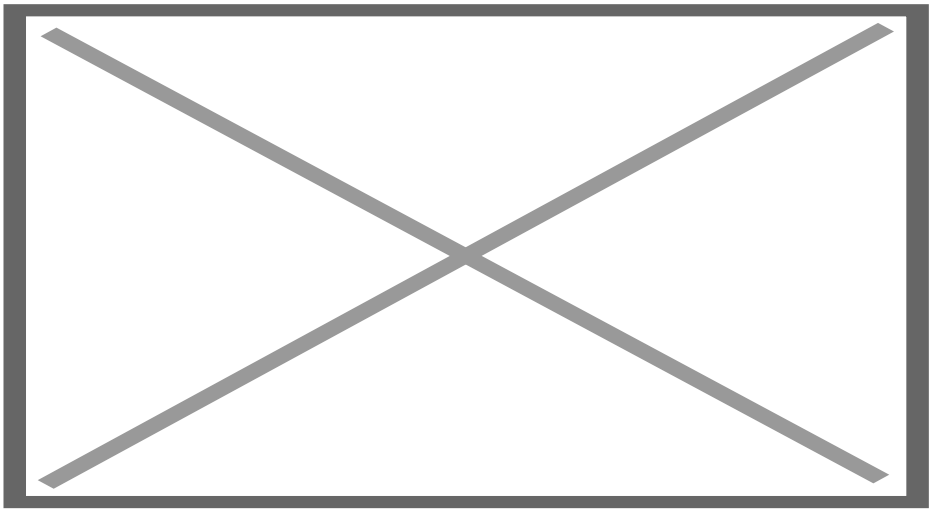
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Information

- List of Pathways
- Overview
- Application requirements

Liste parcours

Master’s Year 1

M1 Algorithmique et Modélisation à l'Interface des Sciences

Add to Compare

M1 Artificial Intelligence

Add to Compare

M1 Computer and Network Systems

Add to Compare

M1 Data management in large-scale distributed systems

Add to Compare

M1 Data, Knowledge and Hybrid Artificial Intelligence (DKAI)

Add to Compare

M1 Distributed, Parallel, and Quantum Computing (1st year Master's DiPaQ)

Add to Compare

M1 Human computer Interaction

Add to Compare

M1 Informatique pour la Science des Données (ISD) - voie par apprentissage

Add to Compare

M1 Ingénierie des Réseaux et des Systèmes – Apprentissage

Add to Compare

M1 Ingénierie des réseaux et des systèmes – Voie initiale -continue

Add to Compare

M1 Parisian Research Master in Computer Science (MPRI)

Add to Compare

M1 Sécurité des Contenus, des Réseaux, des Telecommunications et des Systèmes

Add to Compare

Master’s Year 2

Distributed and Parallel Computing (M2 DiPaC)

Add to Compare

M2 Algorithmique et Modélisation à l'Interface des Sciences

Add to Compare

M2 Artificial Intelligence

Add to Compare

M2 Computer and Network Systems (CNS)-Systèmes Autonomiques (SA)

Add to Compare

M2 Computer and Network Systems (CNS)-Systèmes en Réseau (SR)

Add to Compare

M2 Data management in large-scale distributed systems

Add to Compare

M2 Data, Knowledge and Hybrid Artificial Intelligence (DKAI)

Add to Compare

M2 Formation à l'Enseignement Supérieur en Informatique

Add to Compare

M2 Human Computer Interaction

Add to Compare

M2 Informatique pour la Science des Données (ISD) - voie par apprentissage

Add to Compare

M2 Ingénierie de Réseaux et des Systèmes - voie Cybersécurité - Apprentissage

Add to Compare

M2 Ingénierie des Réseaux et des Systèmes – Apprentissage

Add to Compare

M2 Ingénierie des Réseaux et des Systèmes

Add to Compare

M2 Parisian Master of Research in Computer Sciences

Add to Compare

M2 Quantum, Mathematics, and Computer Science

Add to Compare

M2 Sécurité des Contenus, des Réseaux, des Telecommunications et des Systèmes

Add to Compare

Présentation

Skills

Computer Science:

- Analyze and model a problem from a computer science perspective, considering its full scope and within various fields of application, in connection with end users.
- Relate a category of problems to the appropriate solving algorithms and evaluate their relevance, including limits of use and effectiveness.
- Identify problems that can be parallelized or distributed, choose and implement the appropriate computing model to solve them.
- Master the key issues of computer system security and data protection.
- Understand and implement principles for managing structured or unstructured databases and designing human-computer interfaces.
- Implement secure and reliable solutions.
- Analyze the results of a proposed solution in relation to an application domain and from the studied perspective (performance, scalability, security, energy consumption, etc.).
- Analyze, interpret, and synthesize results from complex computer systems.
- Characterize the output of the complex computer systems that have been developed.
- Validate the functioning of a complex computer system through testing and result analysis.
- Ensure the long-term evolution of implemented systems.

Transversal Competencies:

- Independently use advanced digital tools for one or more professions or research areas in the field.
- Mobilize highly specialized knowledge, some of which is at the forefront of understanding in a given field of work or study, as the basis for original thinking.
- Develop a critical awareness of knowledge in a field and/or at the intersection of several fields.
- Solve problems to develop new knowledge and new procedures, and integrate knowledge from different fields.
- Make innovative contributions in high-level exchanges and in international contexts.
- Take on responsibilities to contribute to knowledge and professional practices and/or to review the strategic performance of a team.
- Communicate for training or knowledge transfer purposes, both orally and in writing, in French and at least one foreign language.
- Respect principles of ethics, professional conduct, and social and environmental responsibility.

Fiche nationale du Répertoire National des Certifications Professionnelles (RNCP)

Learning outcome targets

The Computer Science Master’s program at Université Paris-Saclay trains tomorrow’s scientists and computer science experts through research, equipping them to address national and international economic, societal, and environmental challenges such as Artificial Intelligence, Big Data, Human-Computer Interaction, Software Security, Cybersecurity, and Quantum Computing. The involvement of researchers and faculty members ensures a meaningful connection between education and research within a prestigious master’s framework. Students benefit from immersion internships in research laboratories, the PhD track, and scholarships from IDEX, the CMA SaclAI School, and the DATAIA cluster.

Connections with the socio-economic world are fostered through companies engaged in our apprenticeship tracks, with the support of Apprenticeship Training Centers (CFA), numerous internships in companies during both M1 and M2, as well as contributions from several associated professors from industry. Finally, international attractiveness takes several forms: firstly, through the many tracks taught in English, and also

thanks to IDEX excellence scholarships supporting incoming and outgoing mobility, which ensure strong international exposure and a diverse range of student backgrounds in the Computer Science Master’s program.

Débouchés

Career prospects

After a Master's or Master's + PhD: researcher or lecturer
After a Master's + PhD: researcher or lecturer
After a Master's or Master's + PhD: engineer (Research & Development, control, production, etc.)
Data Scientist
Data Manager
Artificial intelligence and data ethics Consultant
After a Master's degree: Data scientist
After a Master’s degree: Artificial intelligence (AI) specialist
R&D Engineer
R&D Project Manager
Project Manager
Consultant
Data protection Officer
Information Systems Manager

Further Study Opportunities

PhD
Engineering school
Research dissertation
PhD thesis
Further curricula in innovation management
Students with a 2nd year Master's degree have the possibility to pursue doctoral research.
Admission

Target audience

The computer science master tracks recruit in France students holding a bachelor's degree in computer science, a double degree in computer science and mathematics or computer science and life sciences, as well as students who have completed the first or second year of an engineering school program. Internationally, we admit students holding a bachelor’s degree in Computer Science or in Science and Engineering.

Contact

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  PR

Jean-Christophe Janodet

PR

http://www.universite-paris-saclay.fr/formation/master/informatique