Université Paris-Saclay
Share

Email destinataire :
Vous devez renseigner un email valide
Envoyer
Une erreur est survenue. Merci de réessayer ultérieurement
Le mail de partage a bien été envoyé.
Add to Compare

M2 Data, Knowledge and Hybrid Artificial Intelligence (DKAI)

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

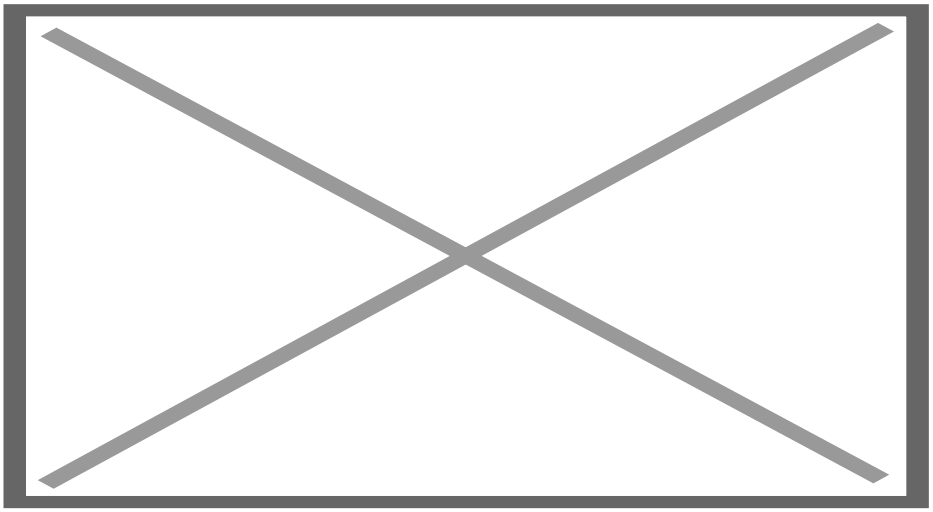
At the heart of the digital revolution, **data science and artificial intelligence (AI)** have become key drivers of innovation. They transform massive amounts of data into strategic information and actionable knowledge. The **Data, Knowledge and Hybrid Artificial Intelligence (DKAI)** track of the **Master in Computer Science** offers a high-level program that trains specialists capable of designing **trustworthy and hybrid AI systems** combining **machine learning** and **symbolic reasoning**.

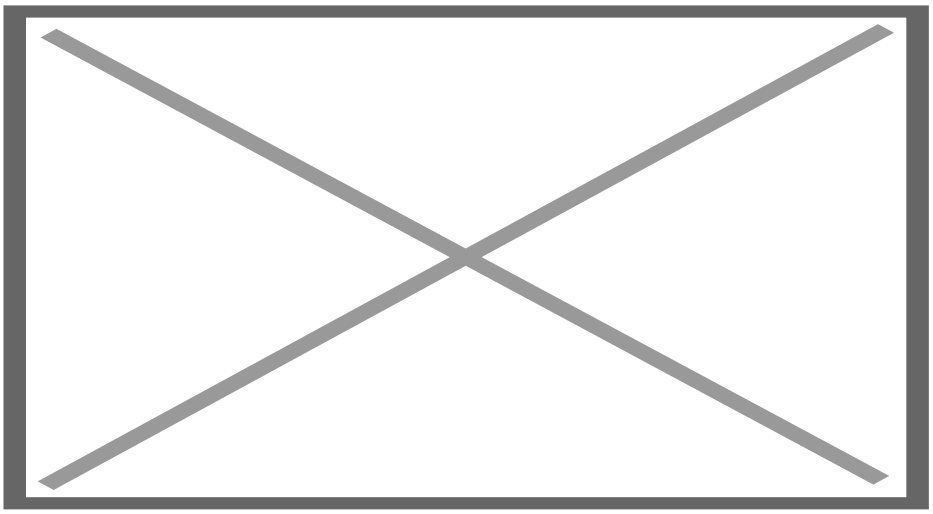
The **DKAI track** of the **Master's in Computer Science** at **Université Paris-Saclay** is a comprehensive and dynamic program, recognized for its distinctive focus. It stands out through the **advanced expertise** it provides and the **broad career prospects** it offers, spanning both **industry** and **research** in **data science** and **trustworthy artificial intelligence**.

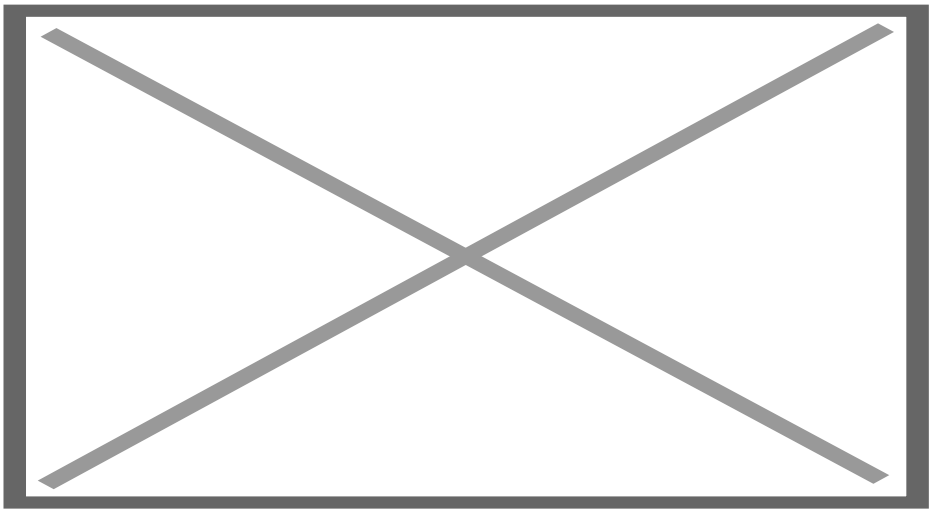
The program follows an **integrated educational approach**, combining the **acquisition of fundamental knowledge** in **data science**, **artificial intelligence**, and **knowledge engineering** with **hands-on experience** gained through **supervised projects**, **case studies**, and **real-world applications**.

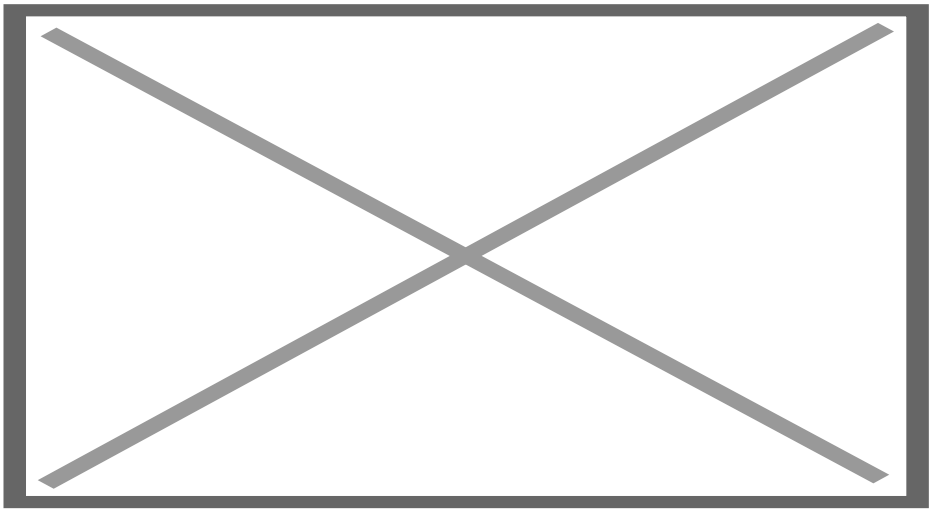
The courses are **closely connected to research activities** carried out within the **laboratories** of the **Paris-Saclay ecosystem** and are reinforced by **strong industrial relationships**. The DKAI track also features a **clear international orientation**, with **courses delivered in English**.

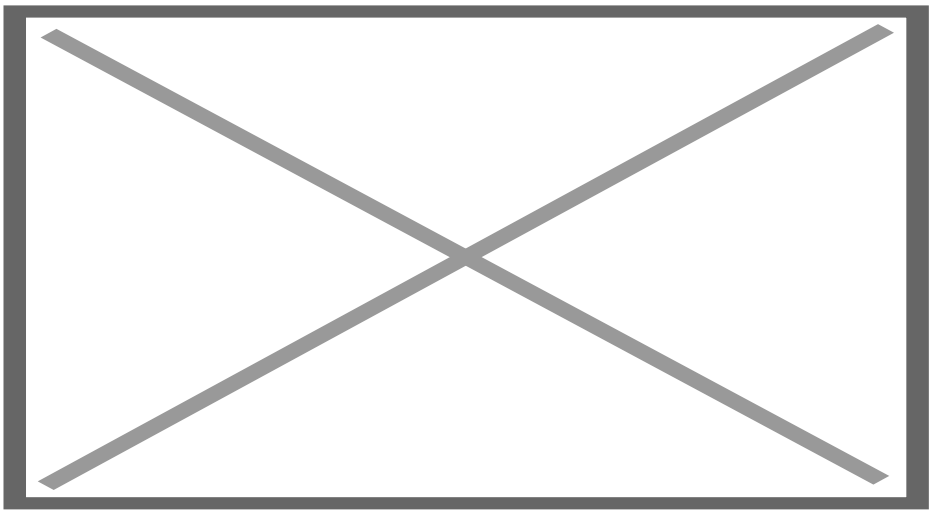
Télécharger la fiche détaillée
Apply Now











Information

- Overview
- Application requirements
- Schedule

Présentation

Skills

Foundations and Global Understanding

Develop a solid understanding of the **theoretical and methodological foundations** of **data science**, **knowledge engineering**, and **hybrid artificial intelligence**, covering both the **symbolic** and **connectionist** dimensions of AI.

Skills in Data Science and Hybrid Artificial Intelligence

- Analyze and model **complex problems** by leveraging methods from **data science**, **symbolic AI**, and **hybrid AI**, across diverse contexts and in connection with user needs.
- Match each problem type with appropriate approaches — **machine learning**, **deep learning**, **symbolic reasoning**, **knowledge integration**, or **hybrid methods** — and assess their relevance in terms of **performance**, **explainability**, and **robustness**.
- Identify problems that require **distributed or massively parallel architectures**, and deploy suitable **big data tools**.
- Design, manage, and operate **relational databases**, **knowledge graphs**, or **unstructured data**, and develop appropriate **visualization and interaction interfaces** for data science applications.
- Develop and deploy **reliable, explainable, and trustworthy AI solutions** that integrate **knowledge representation**, **learning**, and **reasoning**.
- Evaluate and interpret the results of **complex AI/data systems** according to criteria of **performance, scalability, robustness**, and **relevance of the knowledge used**.
- Implement **validation and testing protocols** to ensure the **reliability** and **compliance** of AI and data science solutions.
- Ensure the **maintenance, evolution, and continuous adaptation** of AI/data systems in line with technological advances and application needs.
- Model and reason under constraints, and **extract knowledge** through **declarative mining** and **graph-based reasoning** approaches.

Transversal Skills

- Mobilize **advanced knowledge** in **machine learning**, **knowledge representation**, and **hybrid AI** to develop **innovative approaches**.
- Develop a **critical understanding** of AI and data science methods, particularly regarding their **interpretation limits** and **generalization capacity**.
- Contribute to **research and innovation projects** in AI and data science within **interdisciplinary and international contexts**.
- Assume **scientific and technical responsibilities** to improve the practices and performance of **AI/data teams**.
- Communicate effectively, both **orally and in writing**, in **French and English**, to **disseminate, promote, and explain** the results of AI and data science projects.
- Integrate **ethical, reliability, and social responsibility principles** into the **design and use** of artificial intelligence and knowledge management systems.

Objectives

The **Data, Knowledge and Hybrid Artificial Intelligence (DKAI) track** of the Master’s in Computer Science offers a two-year program of excellence (M1 and M2), combining data science and artificial intelligence. It brings together strong expertise in machine learning, big data, and an in-depth understanding of the different paradigms of AI—from symbolic AI to agent-based AI, including hybrid and generative AI. Throughout the curriculum, students develop their skills through numerous projects, challenges, and two internships in research laboratories or industry, preparing them for ambitious careers in both industry and research.

The **DKAI track** delivers advanced training over two years (M1 and M2) in data science and artificial intelligence. It combines advanced mastery of machine learning techniques, expertise in managing and analyzing massive datasets, and a deep understanding of the various paradigms of AI, from symbolic to

hybrid and generative approaches. Students benefit from multiple opportunities to put their academic knowledge into practice through projects, competitions, and internships in research labs or companies.

A springboard to the careers of tomorrow

This program prepares students to tackle major challenges related to transparency, ethics, and security in the development of AI-based systems. They acquire the skills required to design cutting-edge, reliable, and explainable solutions that comply with regulatory requirements and societal expectations in sensitive sectors. The DKAI track also offers strong academic prospects, equipping students with methodological rigor and scientific expertise to pursue a PhD and contribute to state-of-the-art research in data science and artificial intelligence.

An environment of excellence

Delivered in English, supported by advanced technological resources, and embedded in a stimulating learning environment, the DKAI track trains versatile and responsible experts, ready to address the challenges of data science and artificial intelligence on both a national and international scale.

Débouchés

Career prospects

After a Master's + PhD: researcher or lecturer
Data Scientist
Data Manager
Technology and Artificial Intelligence Ethics Officer
Artificial intelligence and data ethics Consultant
After a Master's degree: Data scientist
After a Master’s degree: Artificial intelligence (AI) specialist
Project Manager
Consulting
Design engineer in the industrial sector
Design engineer in the research / scientific sector
Data protection Officer
Design Engineer
Research & Development Engineer
Research or Design Engineer
Digital transformation consultant

Research professions
Lecturer (after a PhD)
Design Engineer
Teacher (after the CAPES or 'agrégation' competitive exam)
Design Engineer
Technological and artificial intelligence ethicist (in digital companies and specialised start-ups)
Data scientist

Further Study Opportunities

PhD
Engineering school
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
Multidisciplinary Engineering School
Generalist Engineering School through Apprenticeship
the curriculum also enables students to enter the corporate world directly after their graduation, in positions such as Data Scientist, Data Analyst or Machine Learning Engineer.

Admission

Admission Route

Computer Science
Mathematics
Engineering Sciences

Capacity

Available Places

20

Target Audience and Entry Requirements

Admission to the M2 DKAI program is open to students who have completed the M1 DKAI, the M1 Artificial Intelligence, or an equivalent program outside Paris-Saclay. A minimum English proficiency level of B2 (CEFR) is required.

Période(s) de candidature

Inception Platform

From 01/03/2026 to 04/04/2026

From 06/04/2026 to 15/05/2026

Supporting documents

Compulsory supporting documents

Copy diplomas.

Motivation letter.

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

Curriculum Vitae.

Selection sheet completed.

Additional supporting documents

Certificate of English level.

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.

Programme

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	
[DKAI] Towards Adaptive and Agentic AI	3	Semestre 2	12		9				
Charger le détail									
[DKAI] Exploring Data Declaratively: Constraints and Patterns	3	Semester 1	12	3	6				
Charger le détail									
[DKAI] From Symbolic to Neurosymbolic AI	3	Semestre 1	12		9				
Charger le détail									
[DKAI] Graph Analytics	3	Semestre 2	12	9					
Charger le détail									
[DKAI] Knowledge Discovery in Graph Data	3	Semestre 1	10.5	10.5					
Charger le détail									
[DKAI] Towards Hybrid and Explainable Artificial Intelligence	3	Semestre 2	10.5	10.5					
Charger le détail									

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	distan learni cours
Stage long	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
[AI] Reinforcement Learning	3	Semester 1	10.5	10.5					
Charger le détail									
[AI] Deep Learning for NLP	3	Semester 1	10.5	10.5					
Charger le détail									
[AI] Frugal AI	3	Semester 1	10.5	10.5					
Charger le détail									
[AI] Probabilistic generative models	3	Semestre 1	10.5	10.5					
Charger le détail									

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practic class
1 UE Soft Skill à choisir								
Innovation et Entreprenariat	3	Semester 2	10.5	10.5				
Charger le détail								
Impacts Environnementaux du numérique	3	Semester 2	10.5	10.5				
Charger le détail								
CAD design for 3D printing	3	Semestre 2	10.5	10.5				
Charger le détail								
The art of fabricating tangible surfaces	3	Semestre 2	10.5	10.5				
Charger le détail								
History and Societal Impact of AI	3	Semestre 1	10.5	10.5				
Charger le détail								

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practic class
1 UE Soft Skill Obligatoire								
[DKAI] Data and Knowledge Acquisition and Sharing	3	Semestre 2	10.5	10.5				

Charger le détail

Teaching Location(s)

ORSAY
GIF SUR YVETTE

Contact

- **Fatiha SAIS**

  PR

http://www.universite-paris-saclay.fr/formation/master/informatique/m2-data-knowledge-and-hybrid-artificial-intelligence-dkai