Université Paris-Saclay
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M2 Data management in large-scale distributed systems

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

The **DataScale** program trains experts capable of mastering the entire data value chain: data engineering, architectures and advanced AI analytics. It leads to diverse careers (data scientist, data engineer, AI analyst, etc.) across key sectors, and also provides access to doctoral studies in public or private laboratories.

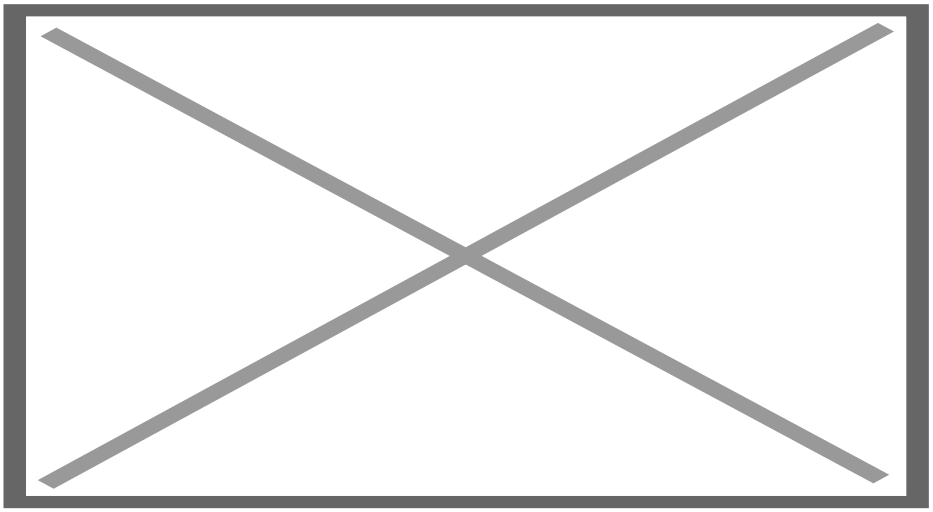
The program is offered as an initial training course. Classes take place from mid-September to the end of March, followed by a 5- to 6-month internship starting in April.

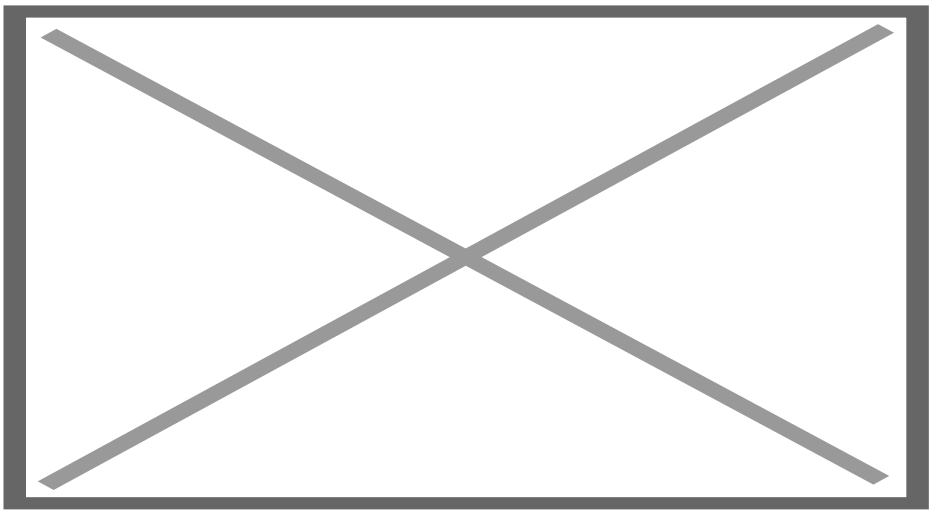
The DataScale program aims to provide students with dual expertise in:

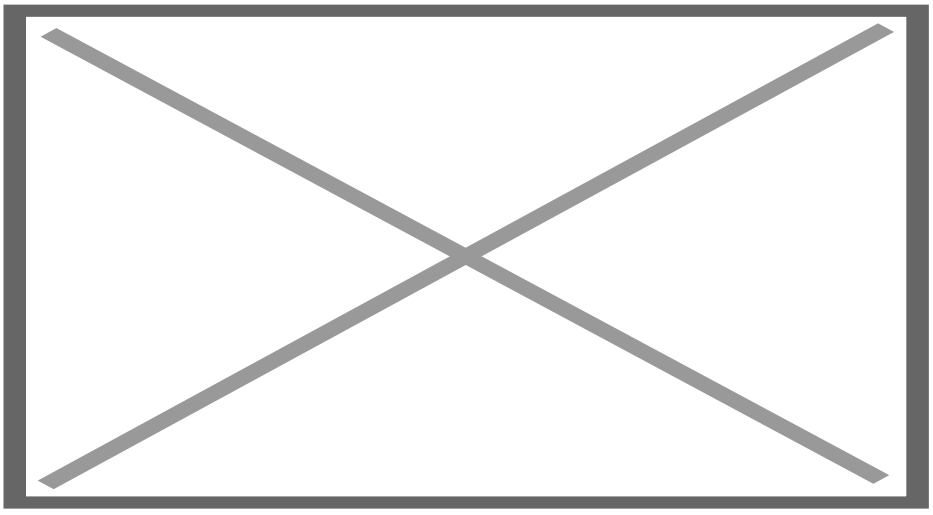
- **Data engineering:** design, administration, security, and optimization of multi-scale architectures (data centers, connected devices).
- **Data analysis:** integration and quality management of heterogeneous data, data mining, machine learning, and AI.

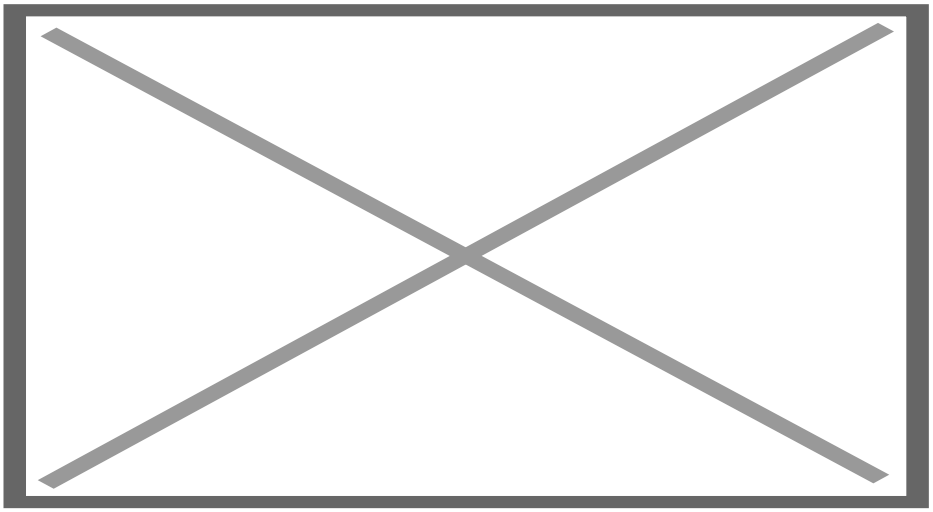
The program opens the way to a wide range of career opportunities (data scientist, data engineer, machine learning engineer, or AI analyst). Graduates may pursue doctoral studies in research laboratories or join service companies, startups, large corporations, or research structures.

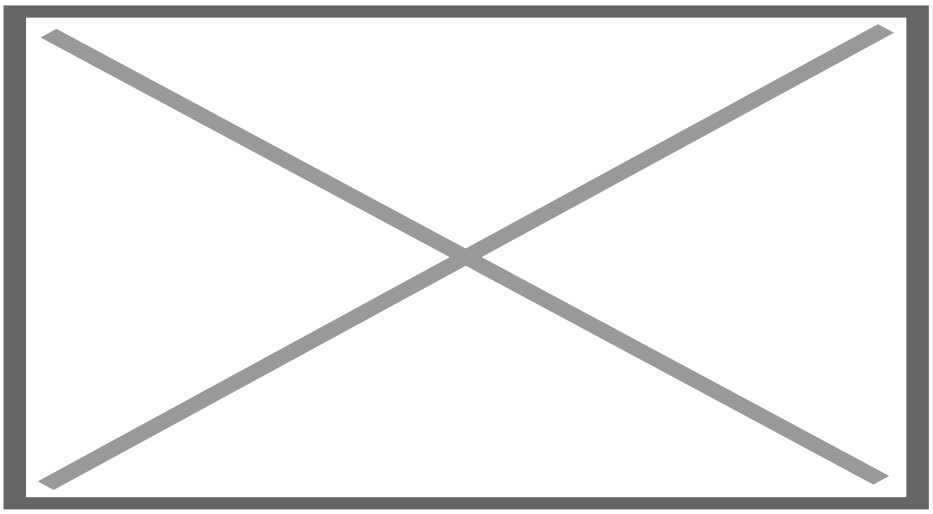
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Information

- Overview
- Application requirements
- Schedule

Présentation

Skills

- Deploy, operate, and manage large-scale data infrastructures.
- Design and develop processing pipelines that transform raw data into knowledge.
- Extract, analyze, and leverage information and knowledge stored in massive data management infrastructures (big data).
- Master and deploy machine learning and AI techniques and algorithms.
- Develop and deploy service-oriented data management applications.
- Produce and present a state of the art, and carry out a scientific research approach.

Objectives

The DataScale program aims to provide students with dual expertise in:

- Data engineering: design, administration, security, and optimization of multi-scale architectures (data centers, connected devices).
- Data analysis: integration and quality management of heterogeneous data, data mining, machine learning, and AI.

The program opens the way to a wide range of career opportunities (data scientist, data engineer, machine learning engineer, or AI analyst). Graduates may pursue doctoral studies in research laboratories or join service companies, startups, large corporations, or research structures.

- Data engineer
- IA analyst
- Data analyst
- Data scientist
- Chief Data Officer
- Database Administrator (DBA)
- Data Security Administrator (DSA)
- Information System Architect
- Architect / Designer / developer of Big Data, Web and IoT applications

Calendar

Start of programme (indicative date)
14/09/2026
End of programme (indicative date)
31/08/2027
Admission

Capacity

Available Places

40

Target Audience and Entry Requirements

The DataScale program is offered exclusively as an initial training course. Prerequisites correspond to a Master’s level in computer science, with a solid background in database management. The typical profiles of students joining DataScale program are: students who have obtained a Master's degree in IT in France, students from partner engineering schools in their last year enrolled in a dual program, students holding an engineering or computer science Master's degree obtained outside France.

Période(s) de candidature

Inception Platform

From 16/02/2026 to 10/07/2026

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.

Certificate of French (compulsory for non-French speakers).

Curriculum Vitae.

Additional supporting documents

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	dis le c
Machine Learning	2.5	Semestre 1	21						
Charger le détail									
Qualité des données	2.5	Semestre 1	21						
Charger le détail									
Modèles et éco-systèmes Post-Relationnels	2.5	Semestre 1	21	0					
Charger le détail									

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	dis le c
Intégration de données	2.5	Semestre 1	21						
Charger le détail									
Architectures orientées Services	2.5	Semestre 1	21	0					
Charger le détail									
Architectures des gestionnaires de données	2.5	Semestre 1	21	0	0				
Charger le détail									

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	dis le c
Fouille de données	2.5	Semestre 1	21						
Charger le détail									
Web sémantique	2.5	Semestre 1	21						
Charger le détail									
Modélisation de processus métiers	2.5	Semestre 1	21	0					
Charger le détail									
Analyse de masses de données de mobilité	2.5	Semestre 1	21						
Charger le détail									

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	c
Séminaires Industriels et Recherche	1	Semestre 2	20						
Charger le détail									
Projet Programmation	1.5	Semestre 2	1.5						

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	
Charger le détail									
Projet Conception	1.5	Semestre 2		1.5					
Charger le détail									
Anglais	3	Semestre 2		27					
Charger le détail									
Régulations des données et des contenus numériques	1	Semestre 2	9						
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	22	Semestre 2		2					
Charger le détail									

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	dis lea co
Sécurité des données corporate et personnelles	2.5	Semestre 1	21						
Charger le détail									
Foundation of database querying	2.5	Semester 1	21						
Charger le détail									
Gestion de données et de services dans le cloud	2.5	Semestre 1	21	0					
Charger le détail									

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	dis lea co
Indexation et visualisation de données massives	2.5	Semestre 1	21						

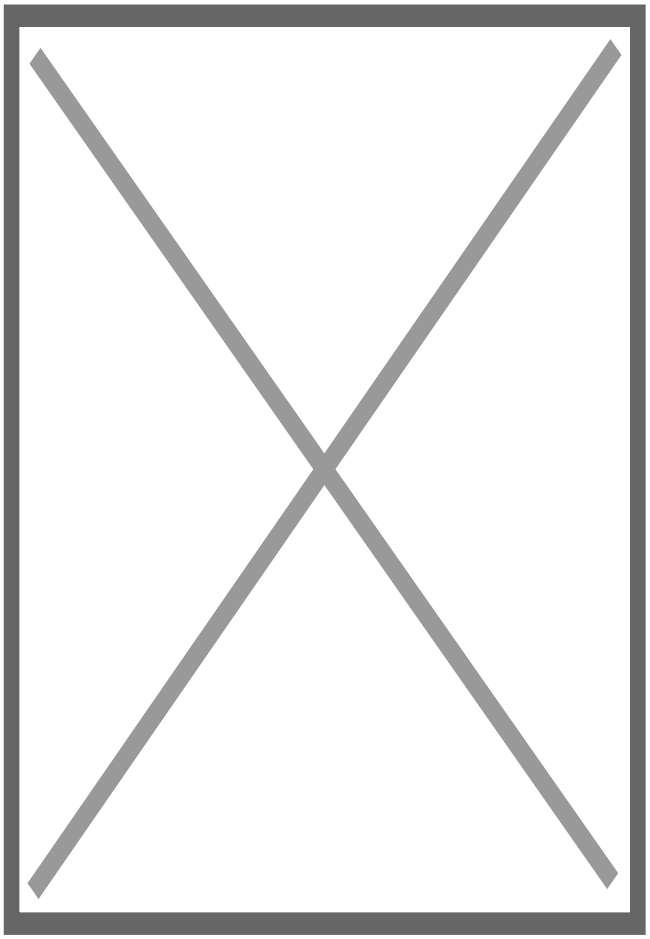
Charger le détail

Teaching Location(s)

VERSAILLES

Training campus

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Versailles

Versailles
Bus 8 - 10 - 13 - 105 - 108 - 471
Versailles Rive Droite - Ligne L
RER C Versailles Château Rive gauche
Voir
Student restaurant (CROUS)
Library
Student residence

Contact

- **Zoubida KEDAD**

  PR
- **Mustapha LEBBAH**

  PR
- **Clémence Perez**

  Secrétaire Département d'informatique

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