

Liora®















Syllabus

Data Scientist



YOUR FUTURE, **DECODED**

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Your future in tech starts here

We help **tomorrow's tech talent** take control of their future.

Our mission: to provide them with the tools, framework, and support they need to grow, acquire lifelong skills, and make a positive impact on the world.

Through a hybrid learning approach that combines **technological innovation** with **personal guidance**, we create a **unique experience** to prepare them for the challenges of tomorrow.

Key figures

>70

Fortune 500 companies grow their teams with our training

87%

Satisfaction rate

76.1%

Success rate

84.1%

Employment rate

50K

Liora Alumni

They trust us

AIRBUS

AIRFRANCE

Allianz

amazon

arianeGROUP

AXA

BCG



BNP PARIBAS
CARDIF

Capgemini



EDF

Google



Microsoft

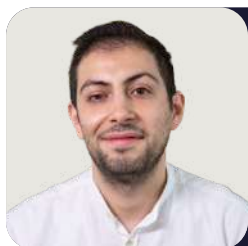
orange

STELLANTIS

TotalEnergies

Expertise that actually gets you further

Our **teaching team** is made up exclusively of **in-house professors**, fully dedicated to teaching and research. Their commitment ensures a **high-level learning experience**, aligned with **market demands**.



Charles S.

CTO & Academic Director (9 years of experience)

A graduate of École Polytechnique, Charles specializes in programming, Machine Learning, and Deep Learning.



Raphael K.

Academic Director

With over 10 years of experience in data and instructional design, he holds a Master's degree in Statistical Learning and Data Science from Université Paris-Dauphine. He has contributed to the structuring and creation of leading Data curricula, leveraging advanced skills in programming, statistical analysis, and machine learning.



Gaspard G.

Data Scientist

Holder of a Master's degree in Mathematics from École Normale Supérieure and a Master's degree in Data Science from the University of Paris-Dauphine, Gaspard specializes in Computer Vision and NLP. He is currently in charge of the Data Science division at DataScientest.



Yohan C.

Training Program Lead for Data Scientist

Holder of a Master's degree in Statistical and Financial Engineering with a specialization in Data Science from the University of Paris-Dauphine, Yohan is specialized in Machine Learning and in the analysis and management of relational databases. He is currently in charge of the Data Scientist training program.

[Book a meeting](#)

Training that fits your rhythm

Liora offers a **fully remote training** experience in a hybrid format, combining **flexibility** with **hands-on learning** through a **Learning by Doing** approach.

You can choose the pace that fits your schedule:



Bootcamp

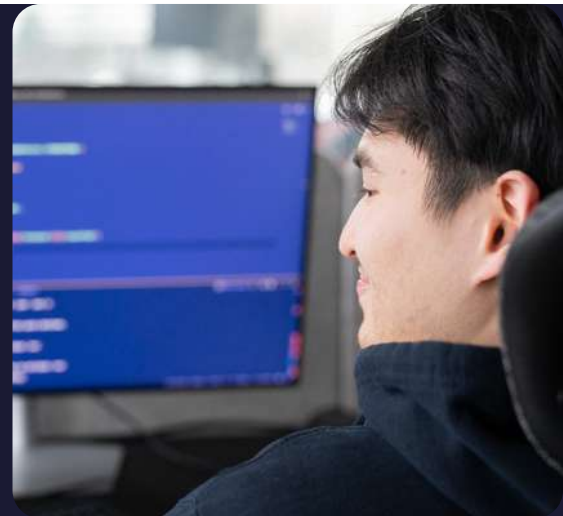
Fast-track your training with our intensive program

- Duration: **14 weeks**
- Pace: **35-40h/ week**
- Program length: **500h**

Part time

Flexible: the format designed to allow you to work while you train

- Duration: **10 months**
- Pace: **10-12h/ week**
- Program length: **500h**



[Book a meeting](#)

Training overview



Candidates must have:

- Basic knowledge of mathematics - especially statistics and probability
- English fluency is required
- A free placement test will assess your skills

For candidates who do not meet the required qualification level, an exemption may be granted based on application and written test. Accessing the training requires a computer with internet connection and a webcam.



Our Data Scientist training will provide you with a certificate from **La Sorbonne University**.



[Book a meeting](#)

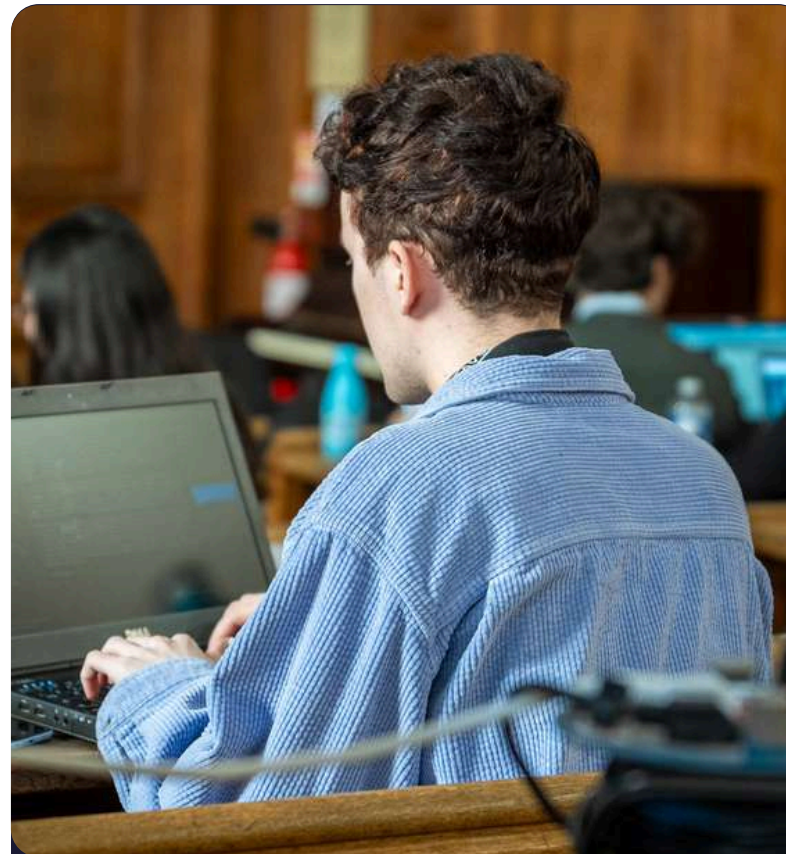
Backbone Project

Throughout the program, learners complete a hands-on project of approximately 120 hours designed to progressively combine all the skills acquired during the training. Carried out in pairs or groups of three, the project can be selected from a catalog of topics updated monthly and inspired by real professional challenges, or proposed as a personal project, subject to pedagogical approval.

Learners work with real, uncleaned data and receive regular guidance from a project mentor to produce work that meets professional standards.

This project enables a smooth transition from theory to practice, enhances employability, and serves as tangible proof of skills during job interviews.

Projects developed by our learners are showcased every quarter during the Data Days, dedicated YouTube live sessions where participants present their work.



[Discover the Data Days](#)

Your roadmap to becoming a Data Scientist



Python Basics

Programming, Numpy, Pandas



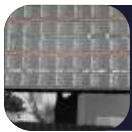
Data Visualization

Matplotlib, Seaborn, Bokeh



Programming Tools

Linux & Bash, Git & GitHub, Unit testing



Machine Learning

Classification, Regression, Clustering



Advanced Machine Learning

Methodology, feature engineering, optimization pipelines



Applied Machine Learning

Ethics & Interpretability, Text Mining, Data Science for Finance and Econometrics



Deep Learning & AI

Dense & convolutional neural networks, TensorFlow, PyTorch



LLMs & Gen AI

Transformers, LLMs, Agents, Prompt Engineering



Data Engineering

SQL, API, PySpark



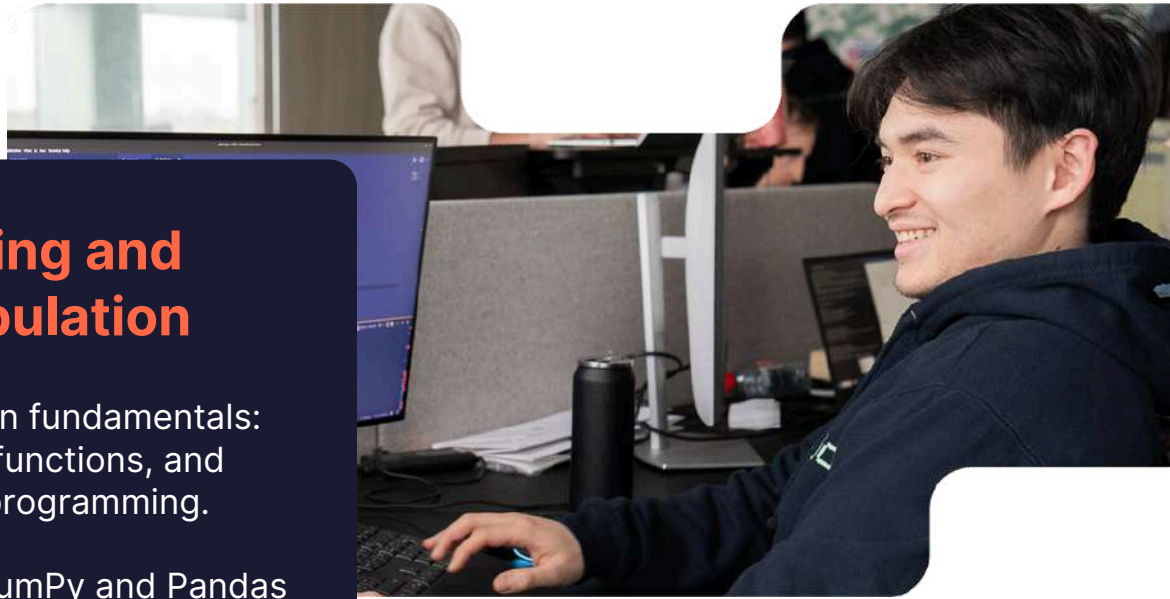
MLOps

MLFlow, Docker

[Book a meeting](#)

Python Basics

35 hours



Programming and Data Manipulation

Mastery of Python fundamentals: variables, loops, functions, and object-oriented programming.

Introduction to NumPy and Pandas for efficient data manipulation.



Data Analysis and Processing

Using **NumPy** to create, modify, and analyze numerical arrays.

Exploring, cleaning, and transforming datasets with **Pandas** for Data Science.



Data Visualization

25 hours

Visualization with Matplotlib and Seaborn

Creation and customization of graphs: line plots, histograms, scatter plots.

Analysis of distributions, statistics, and multivariate exploration with Seaborn.



Interactive Charts with Plotly

Design of dynamic, web-embeddable visualizations.

Use of widgets to enhance the interactivity of charts.



Programming Tools

35 hours

Versioning and Collaboration with Git and GitHub

Version control, branching, and merging with **Git**.

Collaborative work on **GitHub**: pull requests, issues, and GitHub Actions.



Automation and Testing in Programming

Creating unit tests with **Pytest** to improve code quality.

Using **Linux** and **Bash** to automate tasks and manage the terminal.



Machine Learning

40 hours

Modeling and Supervised Classification

Using **Scikit-learn** to apply key algorithms (Logistic Regression, KNN, SVM).

Exploring advanced techniques such as **bagging** and **boosting** to enhance models.



Clustering and Regression

Implementation of **unsupervised methods** (K-Means, Hierarchical Clustering, Mean Shift) and analysis of evaluation metrics.

Application of **linear** and **regularized regression** models for prediction.

Advanced Machine Learning

30 hours

Time Series Analysis and Dimensionality Reduction

Time series modeling with **ARIMA** and **SARIMA** for analysis and forecasting.

Dimensionality reduction with **PCA** and **Manifold Learning** to optimize data utilization.

Anomaly Detection and Advanced Models

Anomaly identification using supervised models (**KNN, Local Outlier Factor, DBScan**).

Application of **robust methods** for fraud and defect detection.



Applied Machine Learning

20 hours

Text Analysis and Data Extraction

Manipulation and preprocessing of **textual data**: regular expressions, sentiment analysis, WordCloud.

Automated **web scraping** with **BeautifulSoup** to extract data from the web.

BeautifulSoup



Ethics and Interpretability in Machine Learning

Awareness of **biases** and **ethical issues** related to data and AI.

Analysis of model interpretability using **SHAP** for greater transparency.



Deep Learning

20 hours

Dense networks and convolutional networks

Understanding and implementing neural networks. Training and evaluating the results obtained by a neural network.

Image processing in deep learning. Using transfer learning methods.



TensorFlow

Optimization with TensorFlow.

Callbacks and custom models.

TensorBoard.



LLMs

40 hours

Introduction to GenAI

Fundamentals of generative AI and prompt engineering, from basics to advanced techniques

Professional applications: productivity, creativity, analysis, and synthesis

Ethical and legal issues: GDPR, AI Act, and limits on the use of AI



PyTorch

Tensors, linear regression, and native layers

Building **CNNs** and introduction to **transfer learning** with TorchVision

Exploring model interpretability using **Captum**

Hugging Face library and its pre-trained models.



Data Engineering

30 hours

Database fundamentals

Introduction to database modeling, schemas, and ETL pipelines, supplemented by learning SQL to query data, use joins, and write nested queries.



Distributed Computing and Large-Scale Data Processing

Introduction to **PySpark** for **distributed processing** and managing **DataFrames** and **RDDs**.

Using **MLlib** to apply Machine Learning on large-scale datasets.

MLOps

30 hours

Model Lifecycle Management with MLflow

Monitoring the **lifecycle** of a Machine Learning project: training, deployment, and model tracking.

Using **MLflow** for experiment tracking, model management, and versioning.



Containerization and Deployment with Docker

Introduction to **Docker** for isolating and deploying **Machine Learning applications**.

Handling images and containers, using **Dockerfile** and **Docker Hub**.



Become AWS Certified

AWS Cloud Practitioner

As part of the Data Scientist program, Liora offers a dedicated training course for **the AWS Cloud Practitioner certification**, designed to build a solid foundation in AWS cloud concepts and introduce its core services.

Delivered in one day, 100% online by, Amazon Authorized Instructors, this training provides the opportunity to take the official Amazon certification exam. A credential widely recognized by employers, it represents a strong asset to stand out in today's job market.



Cloud Fundamentals



Introduction to AWS Fundamentals

[Book an appointment](#)

How to finance your training?

Before your registration, our admissions team will guide you to the most suitable training.

Company funding

Support the upskilling of your teams through public funding.

In Germany, companies may benefit from the **Qualifizierungschancengesetz (Qualification Opportunities Act)**, which allows the Agentur für Arbeit to co-finance employee training programs.

Ask your HR department or contact us to explore available funding options.



Training fee: **7.190 €**

[Book a meeting](#)

Strategic partners to boost your employability

Liora is recognized for the **excellence** of its data **training programs**, offering high-level **certified courses** and **prestigious partnerships** that reflect their quality.

Liora is:

Amazon Training Partner

Our AWS certifications:

- AWS Solutions Architect
- AWS Cloud Practitioner



Microsoft Training Partner

Our Microsoft certifications:

- PL-900
- PL-300
- DP-203



Official Partner of Université Paris 1 Panthéon-Sorbonne

Our data programs are certified by Université Paris 1 Panthéon-Sorbonne, ensuring academic quality and recognition.



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Our alumni share their experience



Karina CASTILLO

Data Expert Consultant @Expertime

"The training is demanding, but the teachers are very friendly and always attentive. The instructors are always up to date with technologies and topics related to data professions. The training combines the theoretical and practical parts very well."

Cyrille CHEMAMA

GCP Data Engineer @GoWizYou

"The curriculum is educational and covers all the essential concepts of Data Science. From Python to advanced Machine Learning, including web scraping. Even without prior experience, the training helps you build skills."



Thomas GOSSART

Semantic Data Science Analyst @Coginov

"A complete and clear contribution for a beginner in Data Science. Rapid skill development with plenty of learning materials. Training accessible to beginners — an investment worth making."



Complete your Data Scientist training

Our additional training courses



Architecting on AWS

If you want to learn how to make architectural decisions in line with AWS, this certification is the right one! Earn the title of **'AWS Certified Solutions Architect'**.

[Discover the training >](#)



Power BI

Do you want to deliver a comprehensive analysis of a dataset and improve your dashboard creation skills? This training is made for you! Learn to master Power BI and earn your official Microsoft certification by becoming a **'Power BI Data Analyst Associate'**.

[Discover the training >](#)

Need more information? We answer everything here!

Training objectives

- Develop and deploy data processing, management, and analysis solutions, including predictive models and tailored algorithms.
- Explore and visualize data to extract insights using advanced statistical and analytical tools.
- Design and optimize artificial intelligence models to solve specific predictive problems.

Teaching methods

- **Practical work:** All training modules are available on our personalized teaching platform Train and include online exercises that gradually allow learners to apply the concepts developed in the course.
- **Masterclass:** Live training sessions with an instructor make it possible to address current issues related to technologies, methods, and tools in the field.
- **Project-based learning:** Enables the learner to engage in real-world professional situations (active learning).

Support and assistance

Every weekday from 9:00 a.m. to 5:00 p.m., our team of expert data trainers takes turns on a dedicated forum to provide **personalized technical support** to all learners. Numerous live Q&A sessions are also organized with our instructors.

Frequently asked questions

What salary can a Data Analyst expect?

To answer this question, we conducted our own survey with about forty partner companies. Depending on the sector and the company, the salary of a junior data scientist ranges between €48,000 and €61,000 per year. After 4 years of experience, this salary increases significantly and ranges between €60,000 and €75,000.

What is the AWS Cloud Practitioner certification?

Today, the AWS platform dominates the Cloud market thanks to its increasingly wide range of services. DataScientest offers you a first introduction to the platform and the opportunity to discover all the services it provides through the Cloud Practitioner training. The AWS Cloud Practitioner training enables its users to define what the Cloud is on AWS, discover the basic architectural principles, as well as all the following aspects: security, support, and pricing.

What are the career opportunities after the training?

Completing the full certification program qualifies you for roles such as:

- Artificial Intelligence Engineer
- AI Project Manager
- Big Data Engineer
- Deep Learning / Machine Learning Engineer
- DevOps Engineer
- AI / Deep Learning / Machine Learning Developer
- AI / Deep Learning / Machine Learning Analyst
- Data Engineer

After your training, if you want to further enhance your skills, DataScientest offers various vendor certifications such as Microsoft or AWS, allowing you to deepen your knowledge and specialize even further in Data!

What is the access time for the training?

The registration for a training program depends on the financing option you choose:

- **Personal or company funding:** You can register up to the day before the training starts (subject to availability of spots).
- **Bildungsgutschein:** Registration must be completed within 2 to 6 weeks before the start of the training.
- **Qualifizierungschancengesetz (QCG):** Registration should be made within 2 to 6 weeks before the start of the training.

Are you in a situation of disability?

Liora will analyze all possible accommodations (pedagogy, materials, technical and human resources) to compensate for your disability and enable you to follow the training under the best possible conditions.

You can contact our disability coordinator for any inquiries regarding your situation: mathilde.v@datascientest.com.

To learn about the journey of a former student with hearing impairment who successfully obtained their diploma with Liora, feel free to click [here](#).

Liora

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