

SYLLABUS DATA ANALYST



**Become an expert
in data analysis!**





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DATASCIENTEST IN NUMBERS

DataScientest is the european leader in personalised reskilling and upskilling in data science. We offer business-oriented training to professionals and individuals alike, who wish to upgrade their skills or retrain.

+70

Fortune Global 500
Companies trained

+15k

Alumni

+3k

Hours of **content**

Key figures for the Data Analyst in 2023

830

Number of **subscribers**

87%

Satisfaction rate

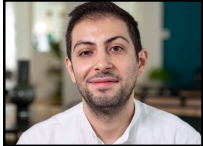
They trust us





OUR TEAM

DataScientest's teaching team consists exclusively of internal professors. They are fully dedicated to teaching and research for our various training and expert courses.



Charles S.

CTO &
Academic Manager
(9 years of experience)

A graduate of the "École Polytechnique", Charles is specialized in programming, Machine Learning and Deep Learning. As CTO of DataScientest, he leads both the faculty and developers working on the platform.



Raphaël K.

Pedagogical Director
(8 years of experience)

Raphael has a Master's degree in "Statistical Learning and Data Science" from the "University of Paris-Dauphine". He designed the Data Analyst course thanks to his knowledge of programming, data visualization and machine learning.

Lecturers

The Data Analyst course is run by lecturers with degrees from leading universities in France. They are selected for their expertise and teaching skills.



Lucas V.

Data Analyst training referent

With a PhD in Statistical Physics from the University of Paris-Saclay, Lucas moved into the field of data science and is now head of our Data Analyst program.



Yohan C.

Data Analyst - SQL

Yohan holds a Master's degree in Data Science from Paris-Dauphine University, specializing in data analysis and relational database management.



Maria M.

Data Analyst - Data Marketing

After an initial experience as an analyst, Maria decided to perfect her skills by taking DataScientest's Data Analyst training course. She subsequently joined the team as a Data Analyst and is now in charge of the Data Marketing curriculum.

[Book an appointment](#)



OUR PEDAGOGICAL APPROACH

DataScientest offers 100% distance learning in english with a pedagogy based on Learning By Doing.

Training Goals

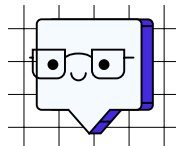
- **Sort, clean** and **process** data for analysis
- **Develop** Machine Learning models for predictive analysis
- **Interpret** results and create dashboards

Hybrid Format

- **Practical work:** For 80% of your time, you are going to be on our personalized learning platform **Learn**, which was developed by DataScientest. The platform includes online exercises enabling you to gradually implement the concepts developed in the course.
- **Masterclass:** 20% of the training take place in Masterclasses. These face-to-face live-web training sessions with our professors allow you to address the all the current problems relating to technologies, methods and tools in the field.
- **Project-based teaching:** In the **backbone project**, you are going to directly apply your newly acquired skills.

Support and assistance

Every day of the week from 9am to 5pm, all the data expert teachers take turns on a dedicated forum to offer personalized technical assistance to you. Educational support is also offered via the “**Slack**” communication network and throughout our Q&A sessions .



"We quickly realised that DataScientest had the same vision of teaching and learning as Orange and that they would be a partner that would listen to our specific needs."

Anne Beaugendre-Frénot

Directrice, Orange Campus Data IA @Orange

Backbone project

Right at the beginning of your training, you will carry out a concrete project whose goal is to gradually combine all the skills you are acquiring during your course. It requires an investment of about 80 hours of work throughout the training.



You will be able to select a project from our list in groups of two or four people. Our topics are updated monthly and are inspired by the work we do in companies. You can also propose a personal project, as long as the data is accessible, and our teaching team confirms it!

This is a crucial stage in your course which makes you fully operational. You will work on unclear data sets and will have to produce a professional and quality work. Some coaching sessions are regularly organized by your project mentor in order to guide and coach you.

This allows you to move efficiently from theory to practice and to ensure that you master the skills required on the different modules. It is also a project that is highly valued by companies. It confirms your skills and knowledge acquired at the end of the Data Analyst training course. You will then be able to justify your skills in Data Analysis with a successful project during your job interviews.

If you want to know more about our learners' projects, we have created Data Days, a live broadcast of their projects.

[Check the Data Days replay](#)



"A real expertise in Data Science, delivered with a tailor-made support in the constant concern of customer satisfaction."

Xavier Bocher

Head of Credit Risk Internal Models & Operational Research @Groupe Crédit Agricole

Prerequisites

In order to join the Data Analytics course, it is of advantage to have a bachelor's degree. Good knowledge in mathematics is necessary, as well as a curiosity for programming. To take the courses, the student must have a computer with an internet connection and a webcam

In Bootcamp or Continuous

Two formats are possible for the Data Analyst training:



Bootcamp

Train quickly, following an intensive 11-week program.

- **Duration :** 11 weeks
- **Pace :** 35-40h/week
- **Total duration :** 400h



Continuing format

Flexible, following the training program while continuing to work.

- **Duration :** 8 months
- **Pace :** 10-12h/week
- **Total duration :** 400h

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Evaluation methods

An evaluation system has been set up throughout your training process. From your first meeting with a DataScientest advisor, we **collect your expectations and needs** at registration. Then, before validating your entry into the course, a **placement test** is sent to you and your knowledge is evaluated using the exams at the end of each module. Finally, through **satisfaction questionnaires**, we collect your appreciation and reviews.

Certification training: Academic recognition



Our certification is issued by The Sorbonne University in Paris. By completing our Data Analyst training, you will receive an official certificate of the French university, Paris-Sorbonne. This will greatly enhance your resume for future job applications.

[Book an appointment](#)



THE CURRICULUM



1 - Programming with Python

Python fundamentals, exploratory statistics, data quality



2 - Data Visualisation

Matplotlib, Seaborn, Art of Storytelling, Plotly, Bokeh



3 - Supervised Machine Learning

Machine Learning for Data Analyst, Classification, Streamlit, Pipelines



4 - Data Analysis

Data analysis methods, Times Series with statsmodels



5 - Extraction and management of Data

Text Mining, Web Scraping with BeautifulSoup and Selenium



6 - Business Intelligence

Power BI, Introduction to Business Intelligence, Make, Tableau, Looker Studio



7 - Database / Big Data

SQL language, Data Integration

[Learn more](#)

Programming with Python - *duration 45h*

Fundamentals of Python

- Discovery of the different variables, lists and tuples
- Presentation of the various operators and control structures
- Introduction to the concept of loop and its different types
- Functions and documentation
- Instantiation of classes and use of modules

Statistics

- Exploring numerical variables
- Exploration of categorical variables
- Study of relationships between variables

Data Quality (optional)

- Presentation of the essential principles of Data Quality
- Treatment of numerical and textual variables
- Data cleaning
- Managing missing values

Skills acquired at the end

- Programming with the Python language and importing libraries
- Manipulate tabular data for analysis
- Use elementary statistics (means, standard deviation, etc.) for data analysis

Data Visualisation - *duration 35h*

Matplotlib

- Presentation of different types of graphs:
 - Curves
 - Graphs
 - Scatter plot
 - Histograms
- Chart customization

Additional Matplotlib (optional)

- Discovering the GitHub platform for collaborative work on Git
- Presentation of the major features of GitHub
 - Fork
 - Pull Request
 - Issues
- Sharing modifications with pull and push
- Presentation of GitHub Actions and application examples

Seaborn

- Distribution analysis
- Statistical analysis
- Multivariate analysis

Bokeh (optional)

- Training in all types of graphics interactive and embeddable on a web page

The art of Storytelling (optional)

- In-depth analysis of a dataset to extract and interpret information

Plotly (optional)

- Training in all types of interactive graphics that can be integrated into a web page

Skills acquired at the end

- Use the usual DataVisualisation libraries
- Choose the type of graph associated with your needs
- Prepare tabular data for DataVisualisation

Supervised Machine Learning - *duration 35h*

Machine Learning Data Analyst

- Introduction to the concepts
- Scikit-learn API
- Linear Models
- Tree type models
- Methodology of modelling

Pipeline (optional)

- Implementing a webapp in Python
- Create interactive graphs and widgets
- Using a Data Storytelling API
- Processors and Estimators
- Building a Pipeline

Algorithms and methodology for classification with Scikit-Learn (optional)

- Presentation of classification algorithms (Logistic regression, kNN, Decision tree, Random forest, SVM...)
- Boosting and Bagging algorithms
- Model selection
- Classification of unbalanced data

Streamlit (optional)

- Introducing how to work with Streamlit
- Handling the method codes with a Use case
- Using best practice on Streamlit
- Deploying the application on the Streamlit Cloud

Skills acquired at the end

- Translate a business problem into a Machine Learning problem
- Master a library dedicated to Machine Learning
- Use a Machine Learning model for a classification and regression case
- Measure the performance of a Machine Learning algorithm
- Interpret the results of a Machine Learning model

Data Analysis - *duration 25h*

Data Analysis

- Principal Component Analysis
- T-SNE
- Linear Discriminant Analysis (LDA)
- Clustering with the K-means algorithm

Time Series with Statsmodels (optional)

- Discovery of ARIMA and SARIMA models
- Analysis and decomposition of a temporal signal

Skills acquired at the end

- Master the main methods of data analysis
- Master the main clustering algorithms with the Scikit-Learn library



Extraction and management of Data - *duration 25h*

Text mining

- Introduction to regular expressions
- Text data management
- Creating wordclouds
- Sentiment analysis

Web Scraping with Selenium (optional)

- Identifying an element on a web page
- Interacting with the web page

Webscraping with BeautifulSoup

- Introduction to web language (HTML, CSS)
- Web content extraction with BeautifulSoup
- Application of Google scrapping

Skills acquired at the end

- Master text data manipulation and pre-processing techniques
- Read and use regular expressions
- Use a Machine Learning model on textual data
- Systematically retrieve data from various web pages

Business Intelligence - duration 30h

Power BI

- Connecting to data sources
- Data Visualization with Power Query
- Transformed data relations and modeling
- Introduction to the DAX language
- In-depth dashboard creation and case study

Tableau (optional)

- Connection to data sources
- Data formatting
- Data visualization

Business Intelligence

- Introduction to BI: concepts and use Business Intelligence

Looker Studio

- Connecting to data sources
- with Looker Studio
- Creating a dashboard
- Advanced features

No-Code automation with Make (optional)

- Creating a scenario
- Activating a scenario

Skills acquired at the end

- Master the fundamentals of several BI tools
- Visualize data at a professional level
- Use the Dax language
- Master a Business Intelligence tool
- Create an automated scenario with no code

Database / Big Data - *duration 25h*

Language SQL

- How to query a database using SQL
- Understand the different types of joins and when to use them
- Master nested queries

Fundamental theory of Data Integration (optional)

- Introduction to relational databases
- Database modeling: terminology and applications
- Data schemas
- Data management : ETL pipelines

Skills acquired at the end

- Read and query relational databases
- Master the syntax of SQL queries
- Process massive datasets using distributed computing
- Discover ETL pipelines
- Discover data schemas

Make an appointment

Microsoft PL-900 : Fundamentals of Microsoft Power Platform

With the Data Analyst course, DataScientest offers you the opportunity to train for this certification and to learn about the different services of the Microsoft Power Platform. At the end of this training, you will have the opportunity to pass the official Microsoft certification and become **Microsoft Certified: Power Platform Fundamentals**.

The training takes place over one day and is 100% remote, with courses given by our teachers who hold the status of Microsoft Certified Trainer.



1 - Introduction to Microsoft Power Platform

MPP Overview, MPP Components, Data Connectors



2 - Microsoft Dataverse Overview

MDV Discovery: Overview, Environment, and Business Rules



3 - Discovering PowerApps

Presentation of Power Apps through a few application cases, Introduction to the Power Apps portal



4 - Starting Power Automate

Power Automate overview and some application cases, Creating automated solutions



5 - Introduction to PowerBI

Overview of Power BI, How Power BI works, Creating dashboards



6 - Introduction to Power Virtual Agents

Presentation of Power Virtual Agents



OUR PARTNERS

DataScientest has developed partnerships with world-renowned institutions. On one hand, with academic institutions such as Université Paris - Panthéon Sorbonne, and on the other hand, with software publishers such as AWS or Microsoft. These partnerships are designed to help learners distinguish themselves from other candidates by obtaining certifications recognized by companies."



Amazon Web Services

Software partner

Today, DataScientest enjoys the exclusive status of an Amazon Digital Partner. Therefore, we have been authorized by Amazon to train teams on their products and services. As part of this partnership, we have built several courses that prepare you for the official **AWS certifications**, such as **Cloud Practitioner** and **Solution Architect**.



Microsoft

Software partner

DataScientest is a **Microsoft Learning Partner** and therefore authorized to train you in official Microsoft certifications (**PL-900 or AZ-900**). These certifications attest to a certain level of expertise in Azure, the collection of cloud computing products and services, and in Power BI, Microsofts business intelligence tool. The registration fee for the official exam is included in the course price.



University Paris 1 - Panthéon Sorbonne

Academic partner

Our **certification** is issued by the **Sorbonne University** in Paris. By completing our Machine Learning Engineer, Data Analyst, Data Scientist, Data Engineer or DevOps training and all of our other courses, you will receive an official certificate of the French university Paris-Sorbonne. This will greatly enhance your resume for future job applications.



ALUMNI TESTIMONIES



Amir ABBASZADEH

Cofounder and CEO @Oilifina Consulting

"DataScientest completely erased this worry in my head and enabled me to realize my project. For me, what distinguishes DataScientest from others is above all the perfectly operational content and the live learning method! This always makes you want to keep going, and no one gets bored in the middle of a course. The bonus of this training is the incredible availability of the experts to help us. Today, I've set up my own business thanks to this course, and there are 8 of us, including 3 Data Scientists."



Pauline SCHIEVEN

Business Analyst - Revenue Operations @Jellysmack

"I did the Data Analyst training in bootcamp format. It went really well, the team is very friendly and professional. The bootcamp format is pretty intense, but it's very well suited to people who are retraining or looking for a job, as it allows them to get 100% into the program! The project is crucial for putting what you learn into practice. I also really appreciated the availability and all the workshops organized by the career center, which reassured us and gave us lots of advice for the job search after the training!"



Rayana Eppenstein

Supply Chain Analyst

"Working with Python in the course made me realize that the activities I most identified with was data analysis. I wanted to advance my career in supply chain management or similar fields as a data analyst. That's how I came to the DataScientest Bootcamp program. Throughout the program, I acquired invaluable practical experience, with new tools and practical cases/examples to study. I'm happy for the opportunity to learn from all the experts and mentors at DataScientest."



Henry Tornow

Data Analyst @Ed-Tech Start-up

"The part-time training programme enabled me to acquire the most important basics and tools for working as a data analyst. I particularly liked the time flexibility of the course and the fact that it was easy to combine with my professional and private life. The course was well structured and easy to follow, and for the practical part (the project) I was able to bring along a use case directly from my company, which will help me directly in practice in the future."



CUSTOMER CARE

Customer Care

The Customer Care team is made up of **technical advisors** and program managers who work together to provide supervised **support** to each class. The technical side of the training is managed by the technical advisors, while the human side is taken care of by the programme managers.

The classes and learners are **monitored individually** to help them achieve their diploma. To this end, we organize training **follow-up interviews** which emphasize the human dimension and allow us to adapt the rules in the event of personal complications. We also offer **advices** on how to manage time and improve the way you learn throughout the course. **Events** are also organized to strengthen group cohesion and avoid the isolation of distance learners.

We are attentive to the comments of our users to continue to improve our training programmes through satisfaction questionnaires. In addition, there are profiles dedicated to supporting and dealing with each learner's questions.



"Caring for our learners is our main goal. We make sure that their training goes well through individual follow-up, advice and an attentive ear to the needs of each individual."

Pauline Messenger

Head of Customer Care Service @DataScientest





TO GO FURTHER

If you'd like to improve your skills, DataScientest has set up a range of expert courses and publisher certifications such as Microsoft and AWS to help you deepen your knowledge and perfect your data skills!

Here are our different upskilling tracks:



Architecting on AWS

If you want to know how to make architectural decisions in accordance with AWS, this is the certification for you! Earn the status of **"AWS Certified Solutions Architect Associate"**.

[Discover the curriculum »](#)



**DO YOU WANT TO BECOME
A DATA ANALYST?**



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