

Online Data Course

DATA SCIENCE CERTIFICATE



Reactfin
Academy

Reactfin

Strictly Confidential

Why an online data science course?

Fast development of data science

Data Science is **developing at a fast pace** in the industry with a lot of use cases and applications being implemented around various topics

- Training yourself to these new techniques is essential to be up-to-date and make the most of these new opportunities in your future professional career.
- A lot of e-learning training or MOOCS are available on-line on the (statistical) techniques themselves but few are oriented towards specific cases studies



The **goals** of this online data science course are double

- Introduce you to the main data sciences techniques from a methodological point of view
- But also let you practice data science on specific use cases (including coding in R and/or Python) so that the knowledge you acquire isn't just theoretical



Why is this course for you?

Added value whatever your background

This course is designed to be a **broad introduction to data science and machine learning with practical applications**. It will bring added-value to your curriculum whatever your current background in data science

- If you are a beginner, the introductory modules (incl. basics of programming) will provide you with a strong basis for going further in the program
- If you are intermediate, you will have the opportunity to deepen your knowledge and apply it in practice
- If you are already advanced, this course will be a strong reminder of important concepts and will allow you to fine-tune your knowledge and apply it on practical use cases

Some **pre-requisites** are useful to benefit the most from this course

- Well-rounded mathematical and statistical background
- Basic experience with coding (ideally in R and/or Python) is a plus



Structure of the course

A 3 pillars structure

The Online Data Science Course is composed of 3 pillars



E-learning modules: presenting basis of machine learning process, advanced machine learning techniques and data culture applications. The goals of the e-learning modules are the following

- Creating improved awareness around data culture;
- Sharing a common vision on data topics and main steps of a machine learning process;
- Discovering practical applications of data science (in Insurance and Finance);
- Being introduced to technical aspects in a pedagogical way.



Notebooks: web pages with pedagogical explanations and examples of code. Exercises and case studies are also attached to these notebooks for your practicing. The goals of the notebooks are the following

- Combining methodological lessons with practical use cases and exercises
- Going deeper on methodological aspects of data science
- Applying methodologies on real business cases



Interactive expert sessions: designed to help the students refining their understanding of the concepts presented in the e-learning modules and notebooks and discuss practical applications

Structure of the course

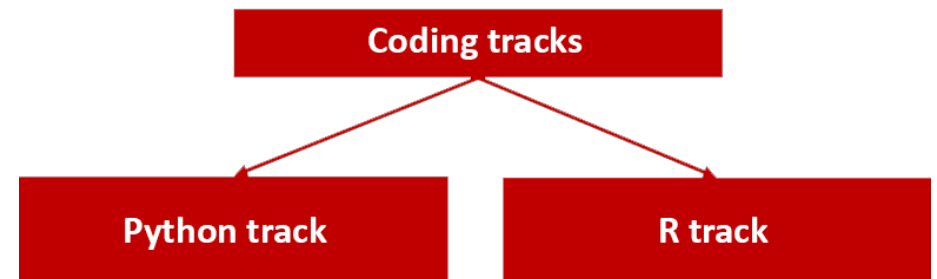
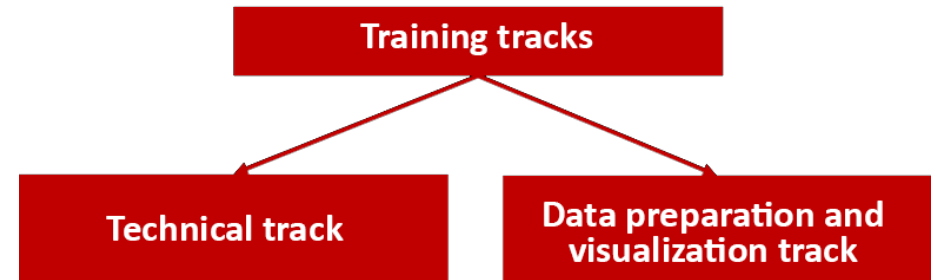
A modular approach

Not all of you have the same interests and we therefore offer you the opportunity to select among two complementary training tracks:

- **Technical track:** designed to strengthen your skills with supervised and unsupervised machine learning techniques [6 e-learning modules and 4 notebooks]
- **Data preparation and visualization track:** designed to develop your skills in data preparation (data collection and treatment) and data visualization (including dashboarding) [6 e-learning modules and 4 notebooks]

Another possibility is to choose one coding software (R or Python) and focus on the notebooks linked to this software

- **Python track:** focused to develop your skills with Python [9 e-learning modules and 3 notebooks]
- **R track:** focused to develop your skills with R [9 e-learning modules and 3 notebooks]



Structure of the course

A modular approach – 4 possible tracks



Technical track

Basics of a machine learning process

Introduction to Python

Introduction to R

Advanced machine learning techniques

Supervised Machine Learning

Unsupervised Machine Learning



Data preparation and visualization track

Basics of a machine learning process

Introduction to Python

Introduction to R

Data culture and applications

Data Preparation pipe-line

Data Visualization



Python track

Basics of a machine learning process

Introduction to Python

Advanced machine learning techniques

Supervised Machine Learning

Data culture and applications

Data Preparation pipe-line



R track

Basics of a machine learning process

Introduction to R

Advanced machine learning techniques

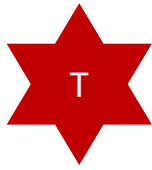
Unsupervised Machine Learning

Data culture and applications

Data Visualization

Content of the course

Technical track



E-learning modules

Each e-learning module takes around 1h to complete (including certification)

1. Basics of a machine learning process

- Data Preparation and Data Quality
- Introduction to Machine Learning
- Introduction to Data Visualization

2. Advanced machine learning techniques

- Supervised machine learning part 1
- Supervised machine learning part 2
- Unsupervised machine learning

Certification on the e-learning modules will be organized through quiz you will have to answer at the end of the e-learning modules

Notebooks

Each notebook takes between 3 and 6h to complete (including certification) in function of your background

1. Introduction to data science software

- Introduction to R
- Introduction to Python

2. Machine learning process

- Machine learning process for supervised machine learning with application in insurance pricing (in Python)
- Machine learning process for unsupervised learning with application in clustering life insurance contracts (in R)

Certification on the notebooks will be organized through exercises/cases studies you will have to solve after the notebooks' completion

Content of the course

Data preparation and visualization track



E-learning modules

Each e-learning module takes around 1h to complete (including certification)

- 1. Basics of a machine learning process**
 - Data Preparation and Data Quality
 - Introduction to Machine Learning
 - Introduction to Data Visualization

- 3. Data culture and applications**
 - Text mining
 - Scraping
 - Advanced data visualization

Certification on the e-learning modules will be organized through quiz you will have to answer at the end of the e-learning modules

Notebooks

Each notebook takes between 3 and 6h to complete (including certification) in function of your background

- 1. Introduction to data science software**
 - Introduction to R
 - Introduction to Python

- 3. Data preparation and Data visualization**
 - Data preparation pipeline (in Python)
 - Data visualization with application in insurance claims analysis and dashboarding (in R)

Certification on the notebooks will be organized through exercises/cases studies you will have to solve after the notebooks' completion

Content of the course

Python track



E-learning modules

Each e-learning module takes around 1h to complete (including certification)

- 1. Basics of a machine learning process**
 - Data Preparation and Data Quality
 - Introduction to Machine Learning
 - Introduction to Data Visualization
- 2. Advanced machine learning techniques**
 - Supervised machine learning part 1
 - Supervised machine learning part 2
 - Unsupervised machine learning
- 3. Data culture and applications**
 - Text mining
 - Scraping
 - Advanced data visualization

Certification on the e-learning modules will be organized through quiz you will have to answer at the end of the e-learning modules

Notebooks

Each notebook takes between 3 and 6h to complete (including certification) in function of your background

- 1. Introduction to data science software**
 - Introduction to Python
- 2. Machine learning process**
 - Machine learning process for supervised machine learning with application in insurance pricing (in Python)
- 3. Data preparation and Data visualization**
 - Data preparation pipeline (in Python)

Certification on the notebooks will be organized through exercises/cases studies you will have to solve after the notebooks' completion

Content of the course

R track



E-learning modules

Each e-learning module takes around 1h to complete (including certification)

- 1. Basics of a machine learning process**
 - Data Preparation and Data Quality
 - Introduction to Machine Learning
 - Introduction to Data Visualization
- 2. Advanced machine learning techniques**
 - Supervised machine learning part 1
 - Supervised machine learning part 2
 - Unsupervised machine learning
- 3. Data culture and applications**
 - Text mining
 - Scraping
 - Advanced data visualization

Certification on the e-learning modules will be organized through quiz you will have to answer at the end of the e-learning modules

Notebooks

Each notebook takes between 3 and 6h to complete (including certification) in function of your background

- 1. Introduction to data science software**
 - Introduction to R
- 2. Machine learning process**
 - Machine learning process for unsupervised learning with application in clustering life insurance contracts (in R)
- 3. Data preparation and Data visualization**
 - Data visualization with application in insurance claims analysis and dashboarding (in R)

Certification on the notebooks will be organized through exercises/cases studies you will have to solve after the notebooks' completion

Interested in knowing more about our online data science course?

Don't hesitate to contact us on learning@reactfinacademy.com for more information.



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Reactfin

Know-How to Risk



About us

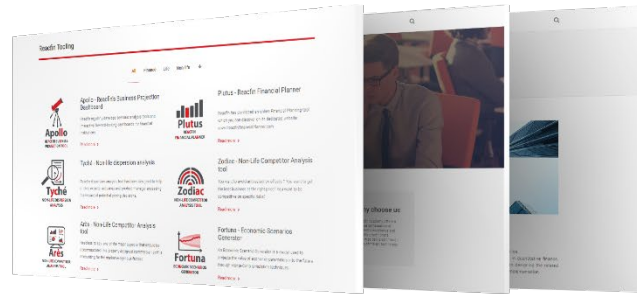
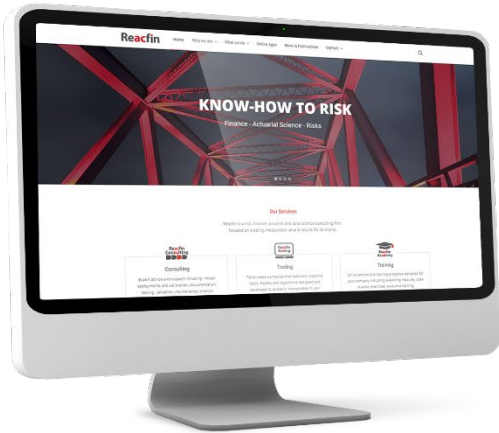
We develop, in partnership with our clients, actuarial & quantitative financial solutions, building on strong data analytics, while securing full transparency and integral knowledge transfer.

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