

Training Module

Responsible Coder

Targeted profiles: Data Scientists

Training objectives

- Discovery of key concepts (Ethics, Bias, Fairness, Transparency, Explainability)
- The different biases and their impacts on equity
- Analysis, assessment and mitigation of bias
- Privacy, Data Governance and Legal Framework
- Model Evaluation: Performance Metric VS Fairness Metric
- Role of Continuous Integration and Testing Methods for AI Systems
- Interpreting Your Model: Understanding, Transparency, and Accountability
- Traceability and Monitoring: scalability and consistency over time of the model

Training modalities



Duration
3 days



Format
Continuous or
Intensive



Modality
Distance
and on-
premises



Scope
Inter or
Intra
company



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Training Details

The Responsible Artificial Intelligence (AI) training aims to equip Data Science professionals with the necessary skills to design, implement and manage ethical AI solutions that respect societal values.

This 3-day training course (to be confirmed because it is necessary to take into account the personal work to be reviewed with DataScientest) is composed of modules presenting the concepts, practical cases and workshops to practice good practices.

The program is as follows :

- **Introduction (1h) :** To set the framework for training and to specify the key concepts of Responsible AI: Ethics - Bias - Fairness - Transparency - Explainability
- **Part 1 - Bias detection (6h):** definition of bias in Machine Learning, factors and types of bias, bias assessments and impacts on equity.
- **Part 2 - Mitigating discriminatory bias in algorithms (7h):** principle of fairness and bias mitigation strategies, implications and limitations, measurement and minimization of bias, open-source libraries.
- **Part 3 - Interpretation of models through ethics and production (7h):** usefulness and use of interpretability, interpretability models and operation of the main tools, actions on data and modeling.
- **Part 4 - Data Science and the Environment (2h):** impacts of digital technology on the environment and practical actions to reduce them.

A practice of the notions learned around bias and ethics is carried out as part of a group project (6 to 8 hours). The project is defended to share the results and evaluate the learners. The groups are accompanied by a DataScientest mentor to guide them throughout this training.

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