Training Sessions Designed by Euranova

WHY DO COMPANIES NEED TRAININGS?

Grow up with technologies

Keep their talents

Attract young people

PEOPLE

Empower their ressources

Increase the growth

BUSINESS

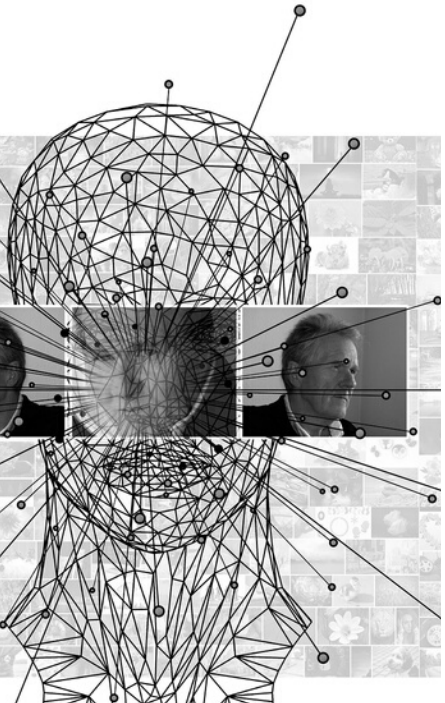
Added value services

Reduce cost

Please, note that upon successfully passing an assessment at the end of the course, the participants will earn a certificate showing that they have completed the course.

All trainings can be customized to fit your requirements.

PART 1
DATA SCIENCE



1 INTRODUCTION TO MACHINE LEARNING

PROFILE

Introduction to Machine Learning training is designed to give a first and pragmatic overview of Machine Learning algorithms and their applications. The attendees will be able to leverage this new knowledge in simple real-world use-cases by applying classification and/or clustering algorithms, in addition to preprocessing (data cleaning) phases.

30% THEORY **70% PRACTICE**

TRAINER

Katsiaryna Krasnaschok
Research engineer
@Euranova

WHAT YOU GET

- Understand the most common machine learning problems and examples of some algorithms
- Hands-on exercise on data science flow
- Hands-on exercise with TensorFlow/ Keras.
- Machine learning certification

2 INTRODUCTION TO DEEP LEARNING

PROFILE

Introduction to Deep Learning training is designed to give a sound understanding of DL most successful techniques. The attendees will be able to leverage their new knowledge in neural networks and TensorFlow to solve data science, computer vision or Natural Language Processing challenges.

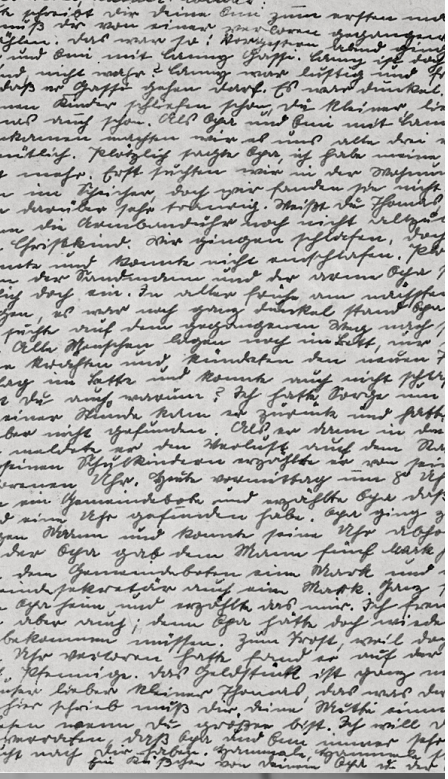
30% THEORY **70% PRACTICE**

TRAINER

Katsiaryna Krasnaschok
Research engineer
@Euranova

WHAT YOU GET

- Understand the most common deep learning problems and examples of some algorithms
- Understand the basic math behind neural networks and how they can be used to solve different problems.
- Hands-on exercise with TensorFlow/ Keras.
- Deep learning certification



3 NATURAL LANGUAGE PROCESSING

PROFILE

This course is designed to give an overview of text analytics workflow and its applications. Attendees will be able to leverage this new knowledge to process and apply machine learning models on text data. A particular focus will be given on traditional approaches text representation techniques vs modern word embeddings and new deep learning techniques for NLP.

50% THEORY **50% PRACTICE**

TRAINER

Katsiaryna Krasnaschok
Research engineer
@Euranova

WHAT YOU GET

- An understanding of the different NLP problems and their formulation
- A clear overview of a complete NLP workflow
- A first hands-on experience NLP workflow
- A first hands-on experience on Deep Learning for NLP
- NLP certification

4 ADVERSARIAL DATA AUGMENTATION

PROFILE

This training is designed to give a sound understanding of what the problem of data scarcity is and how data scientists usually attempt to solve it. The attendees will learn to recognize this problem and to apply the correct solution depending on the situation, thus the attendees will be taught about different adversarial neural architectures, such as GANs, that tackle the problem of small or missing data.

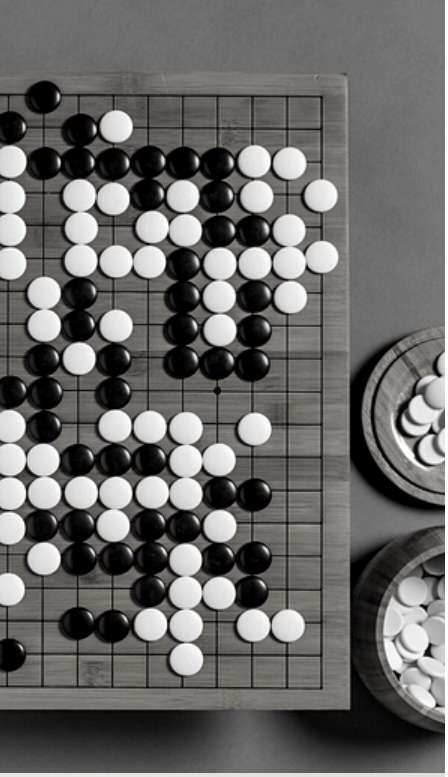
60% THEORY **40% PRACTICE**

TRAINER

Gianmarco Aversano
Research Engineer
@Euranova

WHAT YOU GET

- Learn why and when we need data augmentation
- Get hands-on knowledge of generative adversarial networks
- Apply data augmentation and imputation using adversarial networks
- Data augmentation certification



5 REINFORCEMENT LEARNING

PROFILE

The reinforcement learning training is designed to give a sound understanding of the main concepts of reinforcement learning, covering all aspects from Markov Decision Processes to the different methods of resolution of RL problems. The attendees will be able to identify the different components of the RL problem, implement the corresponding Gym environment and propose a suitable RL algorithm to solve it.

70% THEORY **30% PRACTICE**

TRAINER

Nourchène Ben Slimane
Research engineer
@Euranova

WHAT YOU GET

- Understand the main concepts of Reinforcement Learning
- Get an overview of the Markov Decision Processes
- Understand and identify the components of the RL problem
- Have an introduction to the OpenAI Gym environment
- Have an overview of the different families of RL algorithms and the corresponding taxonomy
- Understand the most common algorithms in RL
- RL certification

PART 2

DATA ARCHITECTURE, MODELING & MANAGEMENT

6 DESIGN OF DATA & AI ARCHITECTURE

PROFILE

This course teaches the basic concepts and details to take into account when designing a Big Data Architecture. Attendees will learn the impact of technical and functional constraints on the storage and processing choices. The course will show, through industrial use cases, the raise of new architecture patterns. It includes a practical part with hands-on session on distributed framework. Attendees will learn how to prepare data and how to process it in batch and in real time.

60% THEORY **40% PRACTICE**

TRAINER

Sabri Skhiri
Research director
@Euranova

WHAT YOU GET

- You will be able to design a solution architecture in the Hadoop stack/Cloud stack that supports your requirements
- You will have the approach, methodology and knowledge to analyse any new technologies in the Hadoop stack
- You will get the foundational knowledge behind all the Hadoop stack to understand the impact of architecture choices
- Big data architecture certification

7 DATA PROTECTION TRAINING

PROFILE

This training offers an in-depth insight into the General Data Protection Regulation, its application and enforcement. It includes case studies to help the audience put the requirements of the law into practice. After completion of this training, the participants will be able to understand the legal framework of the GDPR, what their obligations are, how the GDPR can be applied and how they can comply with the requirements.

60% THEORY **40% PRACTICE**

TRAINER

Nazanin Gifani
Data Privacy Officer
@Euranova

WHAT YOU GET

- Introduction to the main concepts, the scope and obligations of the GDPR
- Hands-on knowledge of the GDPR implementation including documentation and mandatory reporting through an interactive workshop
- Insight into the implementation of the privacy by design in AI projects
- Data protection certification

8 GRAPH DATA MODELING AND MANAGEMENT

PROFILE

This training gives an overview of graph modeling techniques and management tools. The attendees will be able to apply this knowledge to a multitude of real-world modeling and management scenarios such as designing a recommendation engine with graphs.

40% THEORY **60% PRACTICE**

TRAINER

Amine Ghrab
Research Manager
@Euranova

WHAT YOU GET

- Learn about the different graph models and the main differences between a relational data model and a graph model
- Apply graphs for modeling complex, connected scenarios
- Learn about the components of the Neo4j Graph Platform and its query language Cypher & practice with hand-on exercises
- Graph management certification

9 GRAPH PROCESSING AND ANALYTICS

PROFILE

Large graphs with billions of nodes and edges require specific frameworks and algorithms to be efficiently processed and analyzed. This graph processing training gives an overview of the large graph processing landscape, with a focus on the most common frameworks and graph processing paradigms. The attendees will learn how to use these frameworks on real-world applications such as customer segmentation and fraud detection.

60% THEORY **40% PRACTICE**

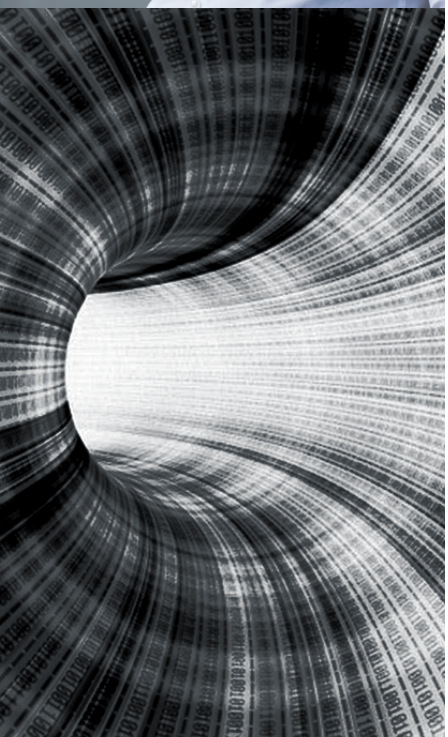
TRAINER

Amine Ghrab
R&D Manager
@Euranova

WHAT YOU GET

- Understand the large graph processing paradigms
- Learn about the most common graph processing frameworks
- Learn with hands-on exercise on large graph processing and analytics with Spark
- Introduction to graph machine learning
- Graph Processing certification

PART 3
DATA ENGINEERING



10 INTRODUCTION TO STREAM PROCESSING

PROFILE

The introduction to stream processing is designed to learn the basics of stream processing. The trainee will learn the basic concepts of real-time processing, time windows, and the important concept of states that makes the modern stream processors so powerful.

100% THEORY

TRAINER

Sabri Skhiri
Research director
@Euranova

WHAT YOU GET

- Understand the most common concepts in stream processing
- Learn the theoretical background required to start programming
- Get hands-on examples to illustrate the concepts
- Introduction to stream processing certification

11 STREAM PROCESSING HISTORY & EVOLUTION

PROFILE

The stateful stream processing that we know today has been evolving for the last ten years. This module gives an overview of the technological evolutions that lead to the current framework and an understanding of the main difference between event stream processing, complex event processing and complex event recognition.

100% THEORY

TRAINER

Sabri Skhiri
Research director
@Euranova

WHAT YOU GET

- Understand the main differences and the pros and cons of event stream processing, CEP & CER
- Learn the evolution of stream management, its features and technical background
- Understand the possibilities and limitations of existing products on the market
- Stream processing evolution certification

12 APACHE SPARK BASICS

PROFILE

Spark Basics training is designed to give a pragmatic overview of Apache Spark. The attendees will be able to extract valuable information from vast amount of data. This is a hands-on training for developers. It includes basics of Apache Spark Batch and Streaming API.

30% THEORY **70% PRACTICE**

TRAINERS

- Julien Gerboud
  Software Engineer
- Jehan Bruggeman
  Data Engineer
  @Euranova

WHAT YOU GET

- An understanding of how Spark works and the cases for which it is well suited
- A hands-on knowledge of how to work with Spark to do batch processing
- A hands-on knowledge of how to work with Spark to do stream processing
- Apache Spark basis certification

13 APACHE SPARK ADVANCED

PROFILE

Spark Advanced training is designed to give a first pragmatic overview of Spark internal mechanisms and possible optimization, plus an overview of the Machine Learning library. The attendees will be able to improve the performances of their Spark jobs and use machine learning algorithms with Spark.

20% THEORY **80% PRACTICE**

TRAINERS

- Guillaume Stempfel
  Data Scientist
- Romain Fabbro
  Data Engineer
  @Euranova

WHAT YOU GET

- Ability to create complete and optimized ML pipeline in Spark
- Hands-on exercises to learn how to solve Batch & Streaming problems
- Tips and tricks to run efficient Spark jobs
- Apache Spark advanced certification

14 APACHE FLINK BASICS

PROFILE

Flink Basics training is designed to give a pragmatic overview of Apache Flink, the main concepts, the Flink Java basics. The attendees will be able to write a simple Flink program that contains user-defined functions in java and apply some operations in batch mode. This is a hands-on training for developers. It includes basics of Apache Flink DataSet API.

50% THEORY **50% PRACTICE**

TRAINER

Philippe Delvaux
Data engineer
@Euranova

WHAT YOU GET

- Learn the main concepts of Apache Flink
- Learn Flink Java basics.
- Learn to apply batch operations using the DataSet API.
- Apache Flink basis certification

15 APACHE FLINK ADVANCED

PROFILE

Flink Advanced training is designed to introduce the the Flink DataStream API and the Table API through a series of exercises using concepts like windowing, machine learning algorithms, state management and dynamic tables.

20% THEORY **80% PRACTICE**

TRAINER

Anas Al Bassit
Data engineer
@Euranova

WHAT YOU GET

- Learn to apply streaming operations using the DataStream API.
- Learn to apply operations using the Table API.
- Learn more advanced concepts of Flink including Windowing, State Management and Checkpointing.
- Apache Flink advanced certification

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