AIBT103 - Big data processing

From the Advanced Master AIBT

(Artificial Intelligence & Business Transformation)

Key elements

Dates: **December 12 to 15, 2022**

Duration: **28 hours, 4 days**

For whom:
recent graduates, jobseekers and experienced employees

Location:
ISAE-SUPAERO, Toulouse

Course fees: **€2,300**

Language: **English**

Highlights

- Introduction to Big Data processing
- Virtualization & could computing
- Practical course

Harnessing the complexity of large amounts of data is a challenge in itself. But Big Data is more than that: originally characterized by the 3 Vs of Volume, Velocity and Variety, it often requires dedicated computing solutions, which will be explored in this module.

Learning objectives

After completing this course, participants will be able to:

- Implement the distribution of simple operations via the Map/Reduce principle in Spark;
- Explain the difference between CPU and GPGPU computation;
- Connect on a cloud computing engine (e.g. Google Cloud Platform) and launch a simple task;
- Understand the usefulness of containers
- Deploy a Docker container.

Prerequisites

- Engineering Degree on Computer Science or a related domain (telecommunications, etc).
  OR
- Engineering Degree on another subject with a major on Computer Science.
  OR
- Work experience on Computer science.

Practical information and registration

Jessica Alix - 05 61 33 83 91 – info.exed@isae-supaero.fr

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Course Content

Distributed computing with Spark:

- History
- MapReduce paradigm
- Hadoop Stack
- Hadoop Distributed File System
- MLlib Machine Learning library

Virtualization and cloud computing:

- Different approaches to virtualization
- Economical models
- Technical benefits (snapshots, dynamic deployment and migration, failover...)
- cloud engines (principles, deployment examples, node choices)

Docker:

- History,
- Fundamental differences w.r.t. virtualization
- Docker components
- Tools

Teaching methods

Teaching methods	Yes
Lectures / tutorial	X
Collaborative learning	
Flipped classroom	
Blended learning (online and face to face)	
Learning by doing	
Project-based	X
Simulation	
Case study	X

Assessment

- Hands-on evaluation on a computer (100 %)