

Spark Course

Day 1

Download and Install: Where to find the documentation

Introduction

Python for Spark

Spark Basics : RDD, Parallelisation, Transformations, Operations, Lazy execution, and Basic commands and syntax

Dataframes and Spark SQL: Accessing files in different formats, Accessing files in the cloud, Spark SQL Queries

Practical hands on exercise

Day 2

Spark Streaming : DStreams, Kafka Akka and Flink, Processing DStreams, Practical Exercise, Twitter analysis, Wikipedia analysis

Day 3

Machine Learning with Spark: Machine Learning Constructs, Gradient descent, gradient descent exercise, K-Means, K- Means exercise

Graph Processing with Spark: Graph Frames, Hands on Exercise

Day 4

Sensor Processing with the SMACK architecture, Spark, MESOS, Akka, Cassandra, Kafka, Hands on Exercise

Day 5

This is a program for a one day introduction to Blockchain to be delivered in Morocco during May 2016. The audience will be students and faculty at ENSIAS followed by a High level Presentation to the Business Community.

The Theory

Distributed Ledger (Database), Consensus Byzantine Generals Problem, Double spend problem, Transactions, Bitcoin Protocol, Hashes and Nonce's, Miners and Proof of Work, Blocks, Chains

Level 1 Ledger

Distributed Transparent Ledger, Problems with distributed databases

Level 2 Contracts

Markets, Crowd funding, Property, Dapps, Daos, Dacs and Das

Level 3 Applications

Wallets, Solar Panels, Games components

Ethereum

Write your own contracts

Solidity

Simple Contract

System of Contracts

Lykke

Coloured Coins

A practical example

A games component exchange

High Level Briefing

Bitcoin, Blockchain, the Denationalisation of Money, the Barter Economy, Funding the start-ups without a venture capital industry, Managing the reconstruction