Understand Quantum Computing

State of the Art

Objectives:
Understand Quantum Computing: Technology, actors, applications, use cases, business & impact

Content:

- Introduction to Quantum Computing
- Various technologies and challenges
- Stakes, market, players and solutions
- Application domains and use cases
- Eviden Quantum Solutions Overview

Delivery mode:

- Duration : 3 hours
- Audience : Conference mode

EVIDEN

Content overview – Day 1

01

Introduction to Quantum Computing: what is a qubit, how to represent it, how to build gate-based circuits and intricate several qubits

02

Introduction to pyAQASM : Atos Quantum Assembly language with a Python extension

03

Hands-on: code your first Quantum program involving superposition and entanglement (EPR pair)

04

Illustration of a complete algorithm: Bernstein-Vazirani

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Content overview – Day 2

01

Discovery of some Basic Quantum Algorithms

- Historic
- FTQC type
- NISQ variational

02

Hands-on: Quantum Teleportation

03

Illustration of more on the Qaptiva environment

- Fermionic module
- Combinatorial optimization
- Noise simulation
- Interoperability
- …