Introduction to Quantum Science and Technology

Eğitim Açıklaması

The Quantum Training is an intensive one-day program designed to provide participants with a fundamental understanding of quantum science and technology. Starting with the basic principles of quantum mechanics, the program explores the impact of emerging quantum technologies on business and engineering applications.

Eğitim İçeriği Nedir?

Overview of Quantum Computing

Quantum Computers

- How Classical Computers Work
- How Quantum Computers Work
- Comparison of Quantum Computers and Classical Computers

Foundations of Quantum Computing

- Qubit (Quantum Bit)
- Mathematical Representation of Qubits
- Multi-Qubit Systems
- Mathematical Representation of Multi-Qubit Systems
- Qubit Gates

- Superposition
- Superconductivity
- Quantum Entanglement

Programming in Quantum Computing

- Python Programming Language
- Programming with Qiskit Library
- Basics of Quantum Programming
- Example: Implementing Addition in Quantum Programming
- Grover’s Algorithm for Search
    - Classical Solutions for Search Algorithms
    - Implementing Grover’s Algorithm
- Quantum Teleportation
    - Teleportation Using Qiskit
- Bernstein-Vazirani Algorithm
- Shor’s Algorithm
- Deutsch Algorithm
- Simulators
    - Quirk: Quantum Circuit Simulator