

MOROCCAN DAY OF QUANTUM INFORMATION AND QUANTUM TECHNOLOGIES

CASABLANCA 25-26 December 2024

Machine Learning and Its Role in Quantum Computing

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Abstract :

Machine learning (ML) has emerged as a powerful tool for extracting insights from data, solving complex problems, and optimizing processes across various domains. This talk will introduce the foundational concepts of machine learning, including supervised and unsupervised learning, in a manner accessible to those unfamiliar with the field. Building on this foundation, we will explore how ML intersects with quantum computing, showcasing its applications in optimizing quantum hardware, correcting errors, and enhancing quantum algorithms. Through a combination of reviews and novel perspectives, this presentation aims to highlight how the synergy between ML and quantum technologies could drive advancements in quantum information science and beyond.