

Hybrid Algorithms for Quantum Computing and Artificial Intelligence

Chapter	Title	Page No.
1.	Introduction to Hybrid Algorithms Understanding the Convergence of Quantum Computing and AI	11
2.	Fundamentals of Quantum Computing Principles Qubits and Quantum Gates	39
3.	Machine Learning Foundations Classical Algorithms and Their Limitations	63
4.	Quantum Machine Learning Overview Techniques Algorithms and Applications	88
5.	Hybrid Quantum-Classical Algorithms for Optimization Problems in AI	118
6.	Quantum Neural Networks Design Architectures and Implementation Strategies	146
7.	Variational Quantum Eigensolver Applications in Quantum Machine Learning	177
8.	Hybrid Algorithms for Image Processing Leveraging Quantum Computing for Enhanced Performance	209
9.	Quantum Reinforcement Learning Techniques for Decision Making and Control	235
10.	Applications of Hybrid Algorithms in Natural Language Processing and Understanding	263
11.	Quantum Data Structures for Efficient Information Retrieval in AI Systems	292
12.	Hybrid Approaches for Data Classification Utilizing Quantum and Classical Techniques	321
13.	Quantum Feature Selection Methods for Improved Machine Learning Models	358
14.	Hybrid Algorithms for Cryptography Enhancing Security through Quantum Computing	391
15.	Integrating Quantum Computing with Edge AI for Real-Time Decision Making	422