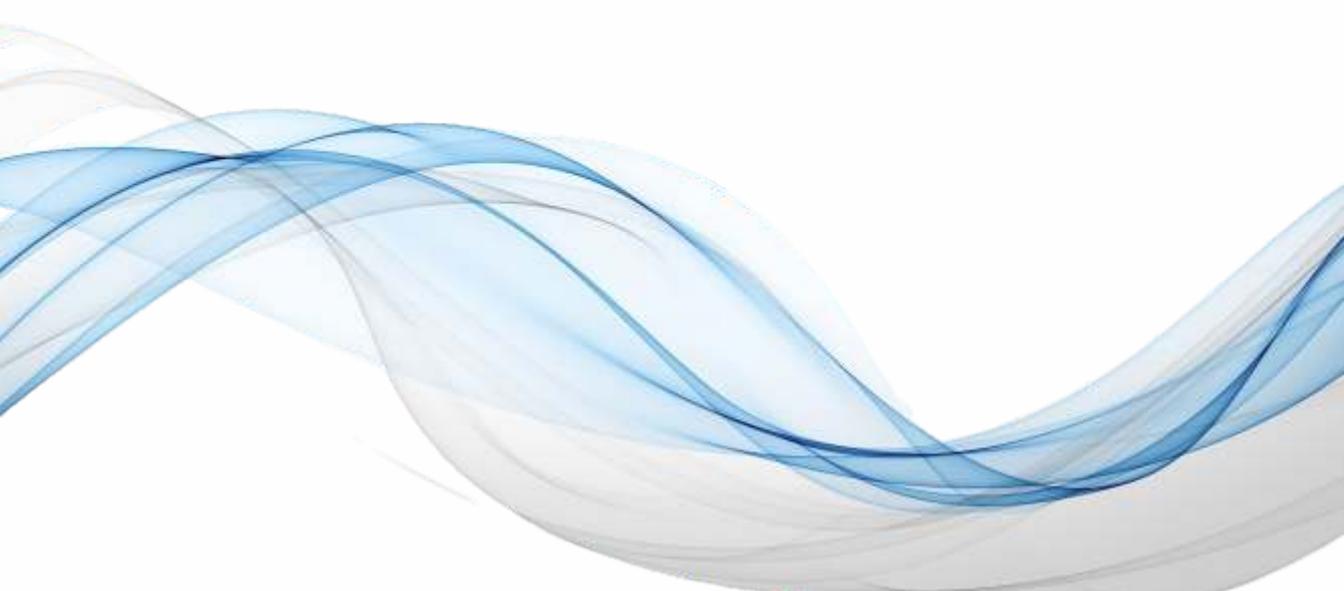


Basics of Quantum Computing



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Preface

This book is intended to serve as an approachable starting point for scholars, students, and enthusiasts who are keen to learn more about this cutting-edge field. Although quantum computing is based on complex mathematics and abstract physics, its fundamental concepts such as superposition, entanglement, and quantum gates, can be easily comprehended. This study attempts to close the gap between curiosity and comprehension by gradually and clearly presenting these concepts.

Chapter I, II, III was prepared by Mr.P.Sathish. This chapter clearly focused on Introduction to Quantum Computing, History and Evolution of Quantum Computing, Classical vs Quantum Computing.

Chapter IV, V, VI, VII was prepared by Mr.L.Dinesh. This Chapter introduces the concept of Quantum Mechanics Fundamentals, Qubits: The Building Blocks of Quantum Computing, Quantum Gates and Circuits and Quantum Algorithms.

Chapter VIII, IX, X was prepared by Mr.S.Alaguganesan. This chapter clearly focused on Domain-Specific Quantum Algorithms, Quantum Hardware Technologies and Quantum Error Correction (QEC).

Chapter XI, XII, XIII, XIV was prepared by Mr.P.Muthamil Selavan. This Chapter introduces the concept of Quantum Cryptography, Applications of Quantum Computing, Challenges in Quantum Computing and Future of Quantum Computing.

We thank our parents, family members and friends for their cooperation and continue in our career ventures. we also take this opportunity to thank publication for their continued cooperation in shaping our work.

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With warm regards and sincere appreciation

Mr. P.Sathish
Mr. L.Dinesh
Mr. S.Alaguganesan
Mr. P.Muthamil Selavan

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