

Introduction to Quantum Computing

AI LaTeX Generator

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Abstract

This paper provides an introduction to quantum computing concepts including quantum bits, superposition, and quantum algorithms.

1 Introduction

Quantum computing is an emerging field that utilizes quantum mechanical phenomena...

2 Quantum Bits

Unlike classical bits, quantum bits (qubits) can exist in superpositions of states...

$$|\psi\rangle = \alpha|0\rangle + \beta|1\rangle \tag{1}$$

3 Quantum Algorithms

3.1 Shor's Algorithm

Provides exponential speedup for integer factorization...