

Quantum Computing in Financial Modeling: Opportunities and Challenges

Jamie Allen

PhD

ETH Zurich

Rämistrasse 101, 8092 Zürich, Switzerland

Kim Jackson

Prof.

National University of Singapore

21 Lower Kent Ridge Rd, Singapore 119077

Pat Smith

Dr.

University of Copenhagen

Nørregade 10, 1165 København, Denmark

Abstract. This paper explores the application of quantum computing in financial modeling, analyzing its potential to transform the finance industry. By addressing complex problems such as risk analysis and portfolio optimization, quantum computing offers unprecedented computational power. The study also discusses the challenges and limitations of current quantum technologies in practical financial applications.

Keywords: Quantum Computing, Financial Modeling, Risk Analysis, Portfolio Optimization, Finance Industry

Introduction

The finance industry is on the brink of a computational revolution with the advent of quantum computing. This groundbreaking technology promises to tackle complex financial problems, including risk analysis, portfolio optimization, and pricing of derivatives, with unparalleled efficiency. This paper investigates the potential of quantum computing to transform financial modeling, offering insights into its applications and implications for the industry. While the computational power of quantum technologies opens new avenues for analysis and decision-making, there are significant challenges and limitations to their practical deployment in finance. Understanding these aspects is crucial for leveraging quantum computing's full potential in financial modeling.

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References

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