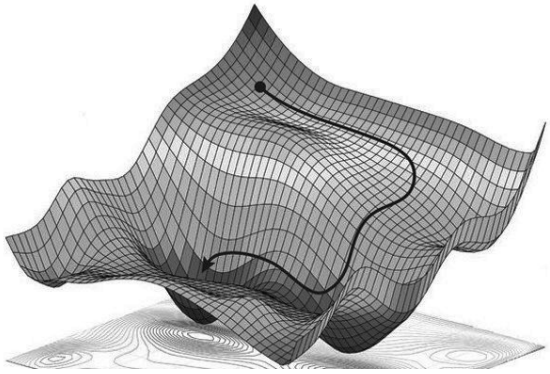
Quantum Machine Learning

Hamza, Ali; Hoda, Bilal

June 29, 2020



Contents

1 Abstract

2 Introduction

2.1 What is Machine Learning?

2.2 What is Quantum Machine Learning?

3 Classical Machine Learning Algorithms

3.1 Gradient Descent

3.2 Support Vector Machines

4 Quantum Machine Learning Algoritms

4.1 Quantum Gradient Descent

4.2 Support Vector Machines via Grover's Algorithm

5 Quantum Neural Networks

6 Reflection

6.1 Advantages of Quantum Machine Learning

6.2 Current Limitations

6.3 Future Proespects

7 Bibliography