QUOTATION 1

AUTHOR, *SOURCE*

QUOTATION 2

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QUOTATION 3

AUTHOR

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QUANTUM COMPUTING: THEORY AND PRACTICE

PUBLISHER NAME

First printing, March 2018

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Dedicated to my family and friends.

Preface

This is Yongli Chen's note on learning quantum computing. The reason the author write this book is simple: Although there are a few books on quantum computing, they are mainly focus on theory rather than application. This book will introduce readers to quantum computing with a focus on applications as well as theory behind those applications.

In addition, this book will be written in a popular science style, which means it will contain A LOT OF explanations. This is because the author is using Feynman technique to study quantum computing, and would like to write down his thought process. Please be aware.

Chapter 1 Introduction

***What** is quantum computing?*

Quantum computing sounds pretty intimidating to most people. What if I remove the "quantum" part, leaving only the "computing" part? Much friendlier, huh? The "computing" part is plain as simple: Give a system some input, and it will give you some output. Now comes the jargon, "quantum". The word "quantum" comes from *Quantum Mechanics*, a branch of physics that study tiny things. Therefore, *quantum computing* is essentially a way of using tiny particles to do calculation for us. The quantum computer manipulates on subatomic particles to do calculations, so you can imagine it is EXTREMELY difficult to build a quantum computer. Although there are prototypes of quantum computer as year of 2018, none of them has real application yet. However, quantum computing is not that far away from us. Actually, it will become an essential technology in the following decades.

Why?

How?

Chapter 2 Title