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## Abstract

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# 23 Contents

24	List of Symbols	3
25	Glossary and Abbreviations	4
26	1 Introduction	5
27	2 asdf	7
28	A Apple	8

# List of Symbols

$\mathbb{R}$	Real number
$\mathbb{C}$	Complex number
$\delta_{ij}$	Kronecker delta
$I$	Identity matrix
$\mathcal{H}$	Hilbert space
$\mathcal{O}$	Big-O notation
$i, j, k, l; p, q, r, s$	Indices

# Glossary and Abbreviations

	ML	Machine Learning
	TN	Tensor Network
	MPS	Matrix Product State
32	SPSA	Simultaneous Perturbation Stochastic Approximation
	RKHS	Reproducing Kernel Hilbert Space
	SVM	Support Vector Machine
	SGD	Stochastic Gradient Descent

# Chapter 1

## Introduction

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## Chapter 2

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## 88 Appendix A

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