UNCERTAINTY IN RECURRENT NEURAL NETWORKS

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UNCERTAINTY IN RECURRENT NEURAL NETWORKS

ALIREZA SAMAR

A thesis submitted in fulfilment of the
requirements for the award of the degree of
Doctor of Philosophy

Advanced Informatics School
Universiti Teknologi Malaysia

APRIL 2017

I declare that this thesis entitled *"Uncertainty in Recurrent Neural Networks"* is the result of my own research except as cited in the references. The thesis has not been accepted for any degree and is not concurrently submitted in candidature of any other degree.

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Name	:	Alireza Samar
Date	:	April 13, 2017

Dedication

ACKNOWLEDGEMENT

Acknowledgement

ABSTRACT

This is the English abstract

ABSTRAK

Ini adalah abstrak Bahasa Melayu

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

ANN	-	Artificial Neural Network
PC	-	Personal Computer
SVM	-	Support Vector Machine
XML	-	Extensible Markup Language

LIST OF SYMBOLS

γ	-	Whatever
σ	-	Whatever
ε	-	Whatever

LIST OF APPENDICES

CHAPTER 1

INTRODUCTION

1.1 Problem Background

Introduction to the thesis [1] to the thesis [2]. This section attempts to give a brief introduction to quantum computing. Before entering the microscopic world of quantum computing, we revisit the present digital system commonly used by the masses. The current digital system is based on binary digits, commonly known as bits. Each bit is represented with a binary value called "logic 0" or "logic 1" and the number of distinct states is 2^n, where n is the number of bits. Physically, these logic values are typically represented by two different voltage levels. In this thesis, such computers are referred to as a *classical computer*.

1.2 State-of-the-Arts

1.3 Problem Statement

1.4 Objective and Scope

1.5 Organization

CHAPTER 2

LITERATURE REVIEW

2.1 State-of-the-Arts

2.2 Limitations

1. Mentor Graphics 2
   (a) item 3
2. item 4

2.3 Research Gaps

The processing at layer-5[1] is done ...

[1] In this thesis, OSI model is used.

CHAPTER 3

RESEARCH METHODOLOGY

CHAPTER 4

PROPOSED WORK

4.1 The Big Picture

4.2 Analytical Proofs

4.3 Results and Discussion

4.4 Chapter Summary

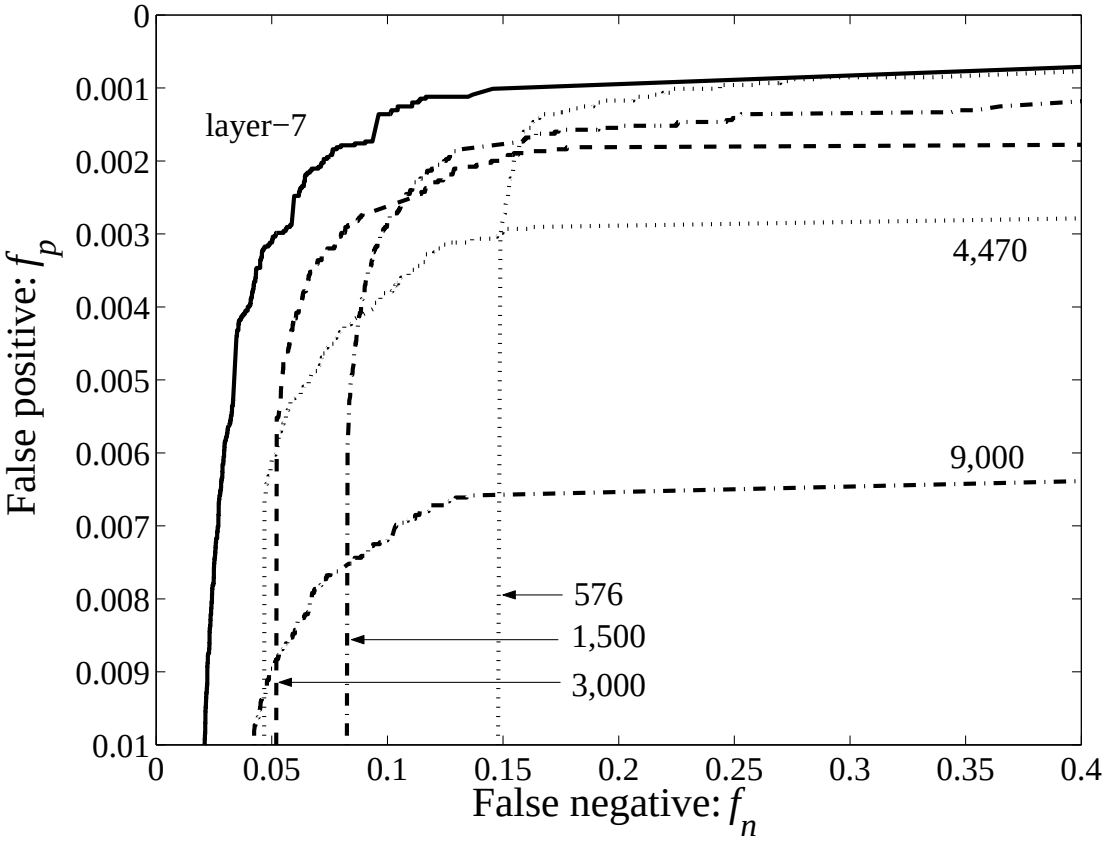

Figure 4.1: Example of a figure. This is a long, very long, long long, long caption. You can give a shorter caption for the "list of figures" using the square braket symbol.

Table 4.1: Example of a table. This is a long, very long, long long, long caption. You can give a shorter caption for the "list of table" using the square braket symbol.

Temperature	Resonant Frequency	Q factor
13 mK $\pm$ 1 mK	16.93	811
40 mK $\pm$ 1 mK	16.93	817
100 mK $\pm$ 1 mK	16.93	815
300 mK $\pm$ 1 mK	16.93	806
500 mK $\pm$ 1 mK	16.93	811
800 mK $\pm$ 5 mK	16.93	814
1000 mK $\pm$ 5 mK	16.93	806

CHAPTER 5

CONCLUSION

5.1 Research Outcomes

5.2 Contributions to Knowledge

5.3 Future Works

REFERENCES

1. Oetiker, T., Partl, H., Hyna, I. and Schlegl, E. *The Not So Short Introduction to LaTeX2ε*. 2013. URL `http://ctan.tug.org/tex-archive/info/lshort/english/lshort.pdf`.

2. Okamoto, Y., Ando, Y., Hataya, K., Nakayama, T., Miyamoto, H., Inoue, T., Senda, M., Hirata, K., Kosaki, M., Shibata, N. *et al.* Improved power performance for a recessed-gate AlGaN-GaN heterojunction FET with a field-modulating plate. *Microwave Theory and Techniques, IEEE Transactions on*, 2004. 52(11): 2536–2540.

APPENDIX A

DO NOT USE LONG TITLES.

APPENDIX B

PSEUDO-CODES

APPENDIX C

TIME-SERIES RESULTS