FLORIDA INTERNATIONAL UNIVERSITY

Miami, Florida

A WISE AND LEARNED DISSERTATION

A dissertation submitted in partial fulfillment of the

requirements for the degree of

DOCTOR OF PHILOSOPHY

in

COMPUTER SCIENCE

by

Ralph Kramden

2011

To: Dean Amir Mirmiran
    College of Engineering and Computing

This dissertation, written by Ralph Kramden, and entitled A Wise and Learned Dissertation, having been approved in respect to style and intellectual content, is referred to you for judgment.

We have read this dissertation and recommend that it be approved.

_____
Audrey Meadows

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Art Carney

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Joyce Randolph

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Jackie Gleason, Major Professor

Date of Defense: November 11, 2011

The dissertation of Ralph Kramden is approved.

_____
Dean Amir Mirmiran
College of Engineering and Computing

_____
Dean Lakshmi N. Reddi
University Graduate School

Florida International University, 2011

DEDICATION

To my parents.

ACKNOWLEDGMENTS

Thanks, everyone!

ABSTRACT OF THE DISSERTATION

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Professor Jackie Gleason, Major Professor

Here is the text of the abstract; notice that the heading is generated automatically.

The text must not exceed 350 words or 35 lines.

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LIST OF FIGURES

CHAPTER 1

INTRODUCTION

1.1   Motivation

Finite automata are among the simplest mathematical models of computation, and
since the 1940s their theory has been one of the cornerstones of theoretical computer
science. The seminal 1959 paper by Rabin and Scott [RS59] introduced *nondeter-
ministic finite automata*, in which the state transitions are not necessarily uniquely
determined by the current state and input symbol; instead the automaton is imag-
ined to have a magical ability to "guess" the correct transition at each step.

As an illustration of LaTeX's mathematics formatting, here is the definition of
Rényi entropy:

$$H_\alpha(X) = \frac{1}{1-\alpha} \log \left(\sum_{x \in \mathcal{X}} P[X = x]^\alpha \right). \tag{1.1}$$

HERE IS A TEXT FIGURE.

Figure 1.1: The caption on this figure is so long that it cannot fit onto a single line, instead requiring a line break.

HERE IS ANOTHER TEXT FIGURE.

Figure 1.2: The caption on this figure is also extremely long, but in this case we have included an optional argument that gives an abbreviated version of the caption, which is what will be shown in the List of Figures.

CHAPTER 2

PRELIMINARIES

In this chapter we establish some notation and initial definitions; for the most part we follow traditional references such as [HU79].

2.1 Alphabets, Languages, and NFAs

This section is quite brief.[1]

2.1.1 What is nondeterminism?

This one is even briefer.[2]

---

[1]Too brief, no doubt!

[2]We've got a lot of work to do. . .

CHAPTER 3
YET ANOTHER CHAPTER

Now we have yet another chapter, with more wise and fascinating discoveries.

BIBLIOGRAPHY

[HU79] John E. Hopcroft and Jeffrey D. Ullman. *Introduction to Automata Theory, Languages, and Computation.* Addison-Wesley, 1979.

[RS59] Michael Rabin and Dana Scott. Finite automata and their decision problems. *IBM Journal of Research and Development*, 3(2):114–125, 1959.

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PUBLICATIONS AND PRESENTATIONS

Kramden, R., (1945). *A fast bus network routing protocol.* Communications of the ACM, 1(1):1–5.