

New Strategies for Automated Random Testing

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I feel it a great honour to dedicate my PhD thesis to my beloved parents
for their significant contribution in achieving the goal of academic
excellence reflected in my dissertation.

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Abstract

This is where you write your abstract ...

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Chapter 1

Introduction

1.1 The problems

And now I begin my first chapter here ...

1.2 Our Goals

and here I write more ...[Knuth \[1984\]](#)

1.3 Contributions

and here I write more ...[Knuth \[1984\]](#)

1.3.1 Dirt Spot Sweeping Random Strategy

... and some more ...

1.3.2 Automated Discovery of Failure Domain

... and some more ...

1.3.3 Random-plus-plus test strategy

... and some more ...

1.4 Thesis Outline

and here I write more ...[Knuth \[1984\]](#)

I would also like to add an extra bookmark in acroread like so ...

Chapter 2

Literature Review

2.1 Random Testing and its variations

And now I begin my first chapter here ...

Here is an equation¹:

$$CIF : \quad F_0^j(a) = \frac{1}{2\pi i} \oint_{\gamma} \frac{F_0^j(z)}{z - a} dz \quad (2.1)$$

2.1.1 Adaptive Random Testing

and here I write more ...[Knuth \[1984\]](#)

2.1.2 Mirror Adaptive Random Testing

... and some more ...

2.1.3 Quasi Random Testing

... and some more ...

¹the notation is explained in the nomenclature section :-)

2.1.4 Feedback Directed Random Testing

... and some more ...

2.1.5 Good Random Testing

... and some more ...

2.2 Automated Random Testing Tools

2.2.1 QuickCheck

... and some more ...

2.2.2 JTest

... and some more ...

2.2.3 JCrasher

... and some more ...

2.2.4 RuteJ

... and some more ...

2.2.5 York Extensible Testing Infrastructure

... and some more ...

2.3 Visualisation of Test Report

2.3.1 XSlice

... and some more ...

2.3.2 stuba

... and some more ...

2.4 Effect of adding Literals to the list of interesting values

2.4.1 stuby

2.4.2 stubz

Chapter 3

Dirt Spot Sweeping Random Strategy

3.1 First Section

nd now I begin my second chapter here ...

3.2 Second Section

nd here I write more ...

3.2.1 first subsection in the Second Section

... and some more ...

3.2.2 second subsection in the Second Section

... and some more ...

3.2.3 third subsection in the Second Section

... and some more ...

Chapter 4

Automated Discovery of Failure Domain

4.1 First Section of the Third Chapter

And now I begin my third chapter here ...

4.1.1 first subsection in the First Section

... and some more

4.1.2 second subsection in the First Section

... and some more ...

4.1.2.1 first subsub section in the second subsection

... and some more in the first subsub section otherwise it all looks the same doesn't it?
well we can add some text to it ...

4.1.3 third subsection in the First Section

... and some more ...

4.1.3.1 first subsub section in the third subsection

... and some more in the first subsub section otherwise it all looks the same doesn't it?
well we can add some text to it and some more and some more and some more and
some more and some more and some more and some more ...

4.1.3.2 second subsub section in the third subsection

... and some more in the first subsub section otherwise it all looks the same doesn't it?
well we can add some text to it ...

4.2 Second Section of the Third Chapter

and here I write more ...

Chapter 5

RandomPlusPlus test strategy

5.1 Random plus plus test strategy

And now I begin my third chapter here ...

5.1.1 first subsection in the First Section

... and some more

5.1.2 second subsection in the First Section

... and some more ...

5.1.2.1 first subsub section in the second subsection

... and some more in the first subsub section otherwise it all looks the same doesn't it?
well we can add some text to it ...

5.1.3 third subsection in the First Section

... and some more ...

5.1.3.1 first subsub section in the third subsection

... and some more in the first subsub section otherwise it all looks the same doesn't it?
well we can add some text to it and some more and some more and some more and
some more and some more and some more and some more ...

5.1.3.2 second subsub section in the third subsection

... and some more in the first subsub section otherwise it all looks the same doesn't it?
well we can add some text to it ...

5.2 Second Section of the Third Chapter

and here I write more ...

Chapter 6

My Conclusions ...

Here I put my conclusions ...

Appdx A

and here I put a bit of postamble ...

Appdx B

and here I put some more postamble ...

References

Donald E. Knuth. *The T_EXbook*. Addison-Wesley, 1984. [1](#), [2](#), [3](#)

Leslie Lamport. *L^AT_EX: A Document Preparation System*. Addison-Wesley, 1986.

W. Rudin. *Functional Analysis*. McGraw-Hill, New York, 1973.