

Machine Learning Approaches to the Blockchain

some hyped-up tagline

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September, 2018

A dissertation submitted in partial fulfilment of the requirements for the degree of M.Sc. Your Degree.

Statement of Originality

I, the undersigned, declare that this is my own work unless where otherwise acknowledged and referenced.

Candidate Jean-Paul Ebejer

Signed _____

Date November 22, 2018

To The Avengers

You know, for saving the world.

Acknowledgements

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

Abstract

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List of Abbreviations

CDMA Code Division Multiple Access	4
GSM Global System for Mobile communication.....	3
TDMA Time Division Multiple Access	3
UA Used Acronym	4

Introduction

Note that you may have multiple `\include` statements here, e.g. one for each subsection.

1.1 Motivation

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A beautiful table is shown in Table 1.1, data from Ebejer et al. [2012] (when citing as part of text, otherwise [Ebejer et al., 2012]).

1.2 Aims and Objectives

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this

		$w = 8$			$w = 16$		
		$t = 0$	$t = 1$	$t = 2$	$t = 0$	$t = 1$	$t = 2$
$dir = 1$							
	c	0.0790	0.1692	0.2945	0.3670	0.7187	3.1815
	c	-0.8651	50.0476	5.9384	-9.0714	297.0923	46.2143
	c	124.2756	-50.9612	-14.2721	128.2265	-630.5455	-381.0930
$dir = 0$							
	c	0.0357	1.2473	0.2119	0.3593	-0.2755	2.1764
	c	-17.9048	-37.1111	8.8591	-30.7381	-9.5952	-3.0000
	c	105.5518	232.1160	-94.7351	100.2497	141.2778	-259.7326

Table 1.1: A Beautiful and Complex Table

text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

A test figure is shown in Figure 1.1.

1.3 Proposed Solution

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language. Hello, here is some text without a meaning. This text should show what a printed text will look like



Figure 1.1: A test figure. This caption is huge, but in the list of figures only the smaller version in the square brackets will appear.

at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

Two figures shown side by side are shown in Figure 1.2. Note the use of the *subfig* package (*subfigure* is outdated).

1.3.1 Showing the Use of Acronyms

In the early nineties, GSM was deployed in many European countries. Global System for Mobile communication (GSM) offered for the first time international roaming for mobile subscribers. The GSM’s use of Time Division Multiple Ac-

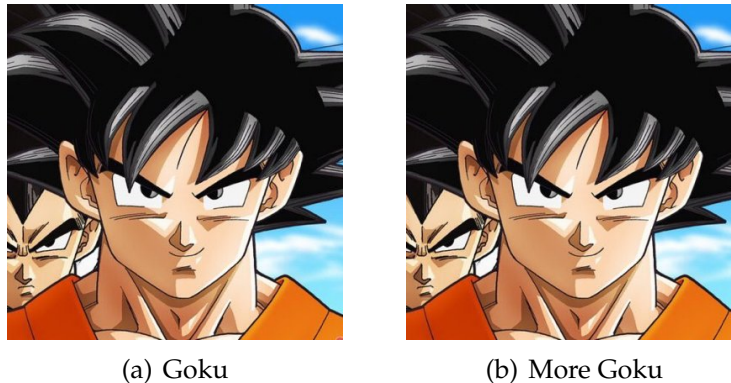


Figure 1.2: The same super saiyan. Two times.

cess (TDMA) as its communication standard was debated at length. And every now and then there are big discussion whether Code Division Multiple Access (CDMA) should have been chosen over TDMA.

If you want to know more about Global System for Mobile communication (GSM), Time Division Multiple Access (TDMA), Code Division Multiple Access (CDMA) and other acronyms, just read a book about mobile communication. Just to mention it: There is another Used Acronym (UA), for testing.

1.4 Document Structure

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

Background & Literature Overview

In this section you need to explain all the theory required to understand your dissertation (i.e. the following chapters)

2.1 Some technique 1

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

2.1.1 Some sub-technique 1

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the

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2.1.1.1 Some sub-sub-technique 1

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2.2 Some technique 2

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

2.3 Evaluation Criteria

This section should contain information on the metrics and background used to evaluate your work.

2.4 Related Work

In this section you need to explain (and reference) similar work in literature.
Make sure to:

- Give a systematic overview of papers with related/similar work
- Highlight similarities/differences to your work (perhaps in the form of a table)

Note that this section may be sectioned based on the different aspects of your dissertation. Some referenced text, as an example [Arrighi, 2003; Ebejer et al., 2016; Withers-Martinez et al., 2012].

Materials & Methods

This section should include a recipe of what you did (explain what you have done so if someone wants to reproduce the experiment, they can). A flow chart is typically helpful. Also, make sure to define all software that you used including version numbers and OS. Should also include a description of statistical methods used (if any).¹

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

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¹For more information see: <http://rc.rcjournal.com/content/49/10/1229.short>

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And after the second paragraph follows the third paragraph. Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

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Results & Discussion

Should include a reiteration of the experiments, and their outcome. Together with a description (discussion). Preamble should include a reminder of the aims and objectives together with a list of experiments to achieve these. Should include many charts and other visualization with appropriate descriptions.

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Evaluation

In an ideal world, you should have two kind of evaluations. The first is against some ground truth (perhaps a random model?). The second kind of evaluation is against other people's work (accuracy, speed, etc.). Any dimension which is of interest, should be evaluated. Evaluation should be statistically sound.

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Conclusions

This section should have a summary of the whole project. The original aims and objective and whether these have been met should be discussed. It should include a section with a critique and a list of limitations of your proposed solutions. Future work should be described, and this should not be marginal or silly (e.g. add machine learning models). It is always good to end on a positive note (i.e. 'Final Remarks').

6.1 Achieved Aims and Objectives

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

6.2 Critique and Limitations

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6.3 Future Work

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6.4 Final Remarks

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Media Content

If the dissertation has a DVD or pendrive attached to it, you will need a section which explains what is on the media (structure, files, data, etc.). This could be a table with filename and description.

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Installation Instructions

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

User Manual

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References

- Pablo Arrighi. Quantum computation explained to my mother. *arXiv preprint quant-ph/0305045*, 2003.
- Jean-Paul Ebejer, Garrett M. Morris, and Charlotte M. Deane. Freely available conformer generation methods: How good are they? *J. Chem. Inf. Model.*, 52(5):1146–1158, 2012.
- Jean-Paul Ebejer, Michael H. Charlton, and Paul W. Finn. Are the physicochemical properties of antibacterial compounds really different from other drugs? *Journal of Cheminformatics*, 8(1), June 2016.
- Chrislaine Withers-Martinez, Catherine Suarez, Simone Fulle, Samir Kher, Maria Penzo, Jean-Paul Ebejer, Kostas Koussis, Fiona Hackett, Aigars Jirgensons, Paul Finn, and Michael J. Blackman. Plasmodium subtilisin-like protease 1 (SUB1): Insights into the active-site structure, specificity and function of a pan-malaria drug target. *International Journal for Parasitology*, 42(6):597–612, 2012. ISSN 0020-7519.