

Machine Learning Approaches to the Blockchain

some hyped-up tagline

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



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To The Avengers

You know, for saving the world.

Acknowledgements

These are the 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

This is the abstract. 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.

Contents

Li	st of A	Abbreviations	xv
1	Intro	oduction	1
	1.1	Motivation	1
	1.2	Aims and Objectives	1
	1.3	Our Approach	2
	1.4	Document Structure	2
2	Back	kground & Literature Overview	3
	2.1	An Example of an Equation	3
	2.2	An Example of a Numbered List	4
	2.3	An Example of a Bulleted List	4
	2.4	An Example of a Figure	5
	2.5	An Example of a Side-by-Side Figure	6
	2.6	An Example of Using Acronyms	6
	2.7	An Example of a Table	7
	2.8	An Example of a Long Table	8
	2.9	A Landscape Table Example	10
	2.10	A Theorem Example	12
	2.11	A Lemma Example	12
	2.12	A Proof Example	13
	2.13	A Listing Example	13
	2.14	An Algorithm Example	14
	2.15	Some Technique One	15
		2.15.1 Some Sub-technique One	15
	2.16	Some Technique Two	16
	2.17	Evaluation Criteria	17
	2.18	Related Work	18

Contents xi

		An Example of Suppressing Page Numbers on A Float Page	
	2.20	Summary	19
3	Mat	erials & Methods	21
	3.1	Summary	21
4	Rest	ults & Discussion	23
	4.1	Summary	24
5	Eval	uation	25
	5.1	Summary	26
6	Con	clusions	27
	6.1	Revisiting the Aims and Objectives	27
	6.2	Critique and Limitations	27
	6.3	Future Work	28
	6.4	Final Remarks	28
3 Materials & Methods 2 3.1 Summary 2 4 Results & Discussion 2 4.1 Summary 2 5 Evaluation 2 5.1 Summary 2 6 Conclusions 2 6.1 Revisiting the Aims and Objectives 2 6.2 Critique and Limitations 2 6.3 Future Work 2 6.4 Final Remarks 2 Appendix A Media Content 2 Appendix B Installation Instructions 3 Appendix C User Manual 3	29		
Aj	peno	dix B Installation Instructions	31
Aj	ppend	dix C User Manual	35
Re	eferer	aces	37

List of Figures

2.1	This is the short caption for List of Figures	5
2.2	Short Caption	6
2.3	Short Random Caption	2(

List of Tables

2.1	A Beautiful and Complex Table (for tables captions above)	7
2.2	Performance of Ligity in HTS mode against the Ligity-compatible DUD-E	
	targets	8
2.3	A landscape table	11

List of Abbreviations

CDMA Code Division Multiple Access	6
GSM Global System for Mobile communication	6
TDMA Time Division Multiple Access	6
UA Used Acronym	6

Introduction

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

General structure of this chapter should read as follows. This chapter should be used to motivate your study and answer the question "Why is this important?". Also, it should define what you set out to achieve (these will be revisited in the conclusions chapter). You should describe your approach to the Aims and Objectives, including an evaluation part.

1.1 | Motivation

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.

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 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.

1.3 | Our Approach

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.

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). But really in this chapter I am going to show you some examples.

2.1 | An Example of an Equation

The following is the most beautiful equation in maths, Euler's Identity (Equation 2.1).

$$e^{i\pi} + 1 = 0 (2.1)$$

where:

e =the constant

i = of complex fame

 π = not of the apple variety

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 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.

2.2 | An Example of a Numbered List

This is an example of a numbered list:

- 1. This is my first point
- 2. My second
- 3. My third!
- 4. And my fourth?

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 | An Example of a Bulleted List

This is an example of a bulleted list:

- This is my first point
- My second
- My third!
- And my fourth?

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.

2.4 | An Example of a Figure

A test figure is shown in Figure 2.1.



Figure 2.1: A test figure. This caption is huge, but in the list of figures only the smaller version in the square brackets will appear.

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.

2.5 | An Example of a Side-by-Side Figure

Two figures shown side-by-side are shown in Figure 2.2.

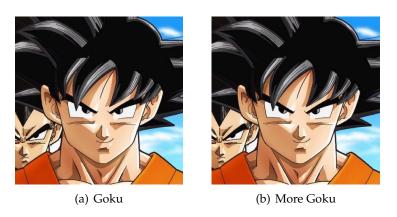


Figure 2.2: The same super saiyan. Two times.

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.

2.6 | An Example of Using 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 Access (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.

	w = 8			w = 16		
	t = 0	t = 1	t = 2	 t = 0	t = 1	t=2
dir = 1						
С	0.0790	0.1692	0.2945	0.3670	0.7187	3.1815
С	-0.8651	50.0476	5.9384	-9.0714	297.0923	46.2143
С	124.2756	-50.9612	-14.2721	128.2265	-630.5455	-381.0930
dir = 0						
С	0.0357	1.2473	0.2119	0.3593	-0.2755	2.1764
С	-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 2.1: A Beautiful and Complex Table (for tables captions above)

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.

2.7 | An Example of a Table

A beautiful table is shown in Table 2.1, data from Ebejer et al. (2012) (when citing as part of text, otherwise use parentheses (Ebejer et al., 2012) version).

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.

2.8 | An Example of a Long Table

The following is an example of a table (Table 2.2) spanning multiple pages.

Table 2.2: Performance of Ligity in HTS mode against the Ligity-compatible DUD-E targets. The mean (and standard deviation in parentheses) values of ROC AUC using Tanimoto is 0.622 (± 0.132), while for Tversky it is 0.671 (± 0.142); the mean EF_{1%} using Tanimoto is 5.648 (± 8.668), while for EF_{1%} using Tversky it is 9.047 (± 12.713).

Target	No.	No.	ROC	ROC	BEDRO	CBEDRO	C EF _{1%}	EF _{1%}	
	of	of	AUC	AUC	Tani-	Tver-	Tani-	Tversky	
	Ac-	De-	Tani-	Tver-	moto	sky	moto		
	tives	coys	moto	sky					
ABL1	182	10,750	0.563	0.473	0.077	0.077	1.653	2.204	
ACE	281	16,877	0.787	0.787	0.336	0.401	12.425	19.525	
ACES	453	26,242	0.634	0.645	0.077	0.155	1.766	5.518	
ADA	93	5,450	0.724	0.660	0.149	0.147	3.251	3.251	
ADA17	532	35,898	0.638	0.728	0.103	0.283	1.317	9.030	
ADRB1	247	15,850	0.523	0.647	0.065	0.129	1.619	5.262	
ADRB2	231	14,999	0.523	0.589	0.052	0.040	1.735	0.000	
AKT1	293	16,450	0.386	0.548	0.039	0.107	2.737	3.080	
AKT2	117	6,900	0.511	0.685	0.140	0.194	8.568	8.568	
ALDR	159	8,988	0.574	0.610	0.202	0.172	10.747	6.322	
AMPC	48	2,845	0.521	0.541	0.049	0.023	0.000	0.000	
ANDR	269	14,349	0.722	0.742	0.194	0.354	4.839	24.938	
AOFB	121	6,875	0.422	0.464	0.045	0.027	1.652	0.000	
BACE1	283	18,100	0.441	0.775	0.017	0.310	0.000	13.062	
BRAF	152	9,950	0.612	0.639	0.208	0.165	12.502	5.264	
CASP3	199	10,694	0.600	0.734	0.068	0.258	0.502	7.031	
CDK2	474	27,838	0.467	0.507	0.021	0.048	0.000	1.055	
COMT	41	3,846	0.789	0.889	0.338	0.665	19.447	58.341	
CP2C9	120	7,449	0.518	0.634	0.058	0.186	1.660	8.299	
CP3A4	170	11,787	0.450	0.493	0.022	0.057	0.000	2.345	
CSF1R	166	12,149	0.526	0.542	0.136	0.152	6.031	7.238	
CXCR4	40	3,405	0.575	0.722	0.217	0.134	12.665	0.000	
DEF	102	5,699	0.732	0.833	0.212	0.379	10.786	15.689	
DHI1	330	19,348	0.481	0.595	0.089	0.062	2.422	1.211	
DPP4	533	40,941	0.586	0.591	0.154	0.157	4.312	3.937	
DRD3	480	34,048	0.484	0.441	0.043	0.046	1.251	0.626	
DYR	231	17,196	0.694	0.758	0.210	0.230	6.504	7.371	
EGFR	542	35,047	0.593	0.491	0.054	0.037	0.922	0.000	
ESR1	383	20,683	0.838	0.861	0.527	0.594	31.281	39.101	
ESR2	367	20,199	0.844	0.870	0.563	0.644	20.130	32.644	
FA10	537	28,324	0.564	0.674	0.058	0.118	0.930	2.232	
FA7	114	6,249	0.762	0.859	0.210	0.332	6.105	8.721	
FABP4	47	2,749	0.786	0.744	0.191	0.276	0.000	10.623	
FAK1	100	5,350	0.642	0.531	0.111	0.065	2.019	0.000	

(continued...)

Target	No.	No. No. RO		ROC	BEDRO	CBEDRO	C EF _{1%}	EF _{1%}	
	of	of	AUC	AUC	Tani-	Tani- Tver-		Tver-	
	Ac-	De-	Tani-	Tver-	moto	sky	moto	sky	
	tives	coys	moto	sky					
FGFR1	139	8,698	0.511	0.522	0.036	0.088	0.722	1.445	
FKB1A	111	5,799	0.605	0.751	0.162	0.164	8.122	3.610	
FNTA	592	51,493	0.411	0.625	0.012	0.132	0.000	4.053	
FPPS	85	8,842	0.917	0.985	0.323	0.776	2.360	36.581	
GCR	258	14,998	0.805	0.834	0.244	0.324	3.092	8.116	
GLCM	54	3,790	0.667	0.685	0.182	0.279	1.873	11.240	
GRIA2	158	11,842	0.662	0.684	0.248	0.154	11.392	5.696	
GRIK1	101	6,547	0.656	0.668	0.203	0.102	7.978	1.995	
HDAC2	185	10,300	0.676	0.734	0.187	0.201	4.318	4.318	
HDAC8	170	10,449	0.640	0.819	0.120	0.377	2.946	8.250	
HIVINT	100	6,640	0.390	0.554	0.030	0.116	0.000	3.018	
HIVPR	535	35,724	0.663	0.872	0.072	0.490	0.187	23.898	
HIVRT	338	18,884	0.495	0.475	0.124	0.085	4.443	1.777	
HMDH	170	8,750	0.480	0.906	0.068	0.652	2.358	35.963	
HS90A	88	4,850	0.635	0.506	0.096	0.083	0.000	3.436	
HXK4	92	4,700	0.662	0.803	0.206	0.307	15.192	9.766	
IGF1R	148	9,300	0.502	0.575	0.057	0.189	2.037	14.941	
INHA	43	2,300	0.493	0.575	0.031	0.045	0.000	0.000	
ITAL	138	8,500	0.619	0.465	0.037	0.065	0.000	0.728	
JAK2	107	6,500	0.472	0.475	0.073	0.118	2.807	6.549	
KIF11	116	6,850	0.755	0.781	0.149	0.219	4.289	2.574	
KIT	166	10,449	0.463	0.437	0.045	0.030	0.000	0.000	
KITH KPCB	57 125	2,850	0.649	0.838	0.228	0.709	14.069	47.483	
LCK	135 419	8,699 27,201	$0.753 \\ 0.471$	0.813 0.437	0.220 0.031	$0.338 \\ 0.043$	8.923 0.000	12.641 1.910	
LKHA4	171	27,391 9,448	0.471 0.718	0.437	0.031	0.043 0.150	8.203	1.758	
MAPK2	101	6,148	0.660	0.670	0.238	0.190	5.988	3.992	
MCR	94	5,149	0.816	0.888	0.174	0.155 0.454	6.436	19.307	
MET	166	11,249	0.566	0.531	0.130	0.454	6.032	0.603	
MK01	79	4,550	0.518	0.602	0.130	0.206	5.095	3.821	
MK10	104	6,600	0.488	0.489	0.020	0.200	0.962	0.962	
MK14	578	35,847	0.511	0.589	0.040	0.064	0.173	0.519	
MMP13	572	37,199	0.648	0.753	0.134	0.268	2.446	9.957	
MP2K1	121	8,146	0.669	0.569	0.187	0.058	3.293	0.823	
NOS1	98	8,028	0.483	0.451	0.109	0.041	3.071	0.000	
NRAM	98	6,200	0.853	0.859	0.342	0.290	11.221	3.060	
PA2GA	99	5,150	0.793	0.756	0.225	0.153	1.020	3.059	
PARP1	508	30,029	0.635	0.692	0.215	0.231	11.234	7.884	
PGH1	195	10,798	0.645	0.637	0.077	0.100	0.000	2.050	
PGH2	435	23,139	0.716	0.780	0.166	0.291	3.444	9.874	
PLK1	107	6,800	0.658	0.531	0.123	0.048	1.871	0.000	
PNPH	103	6,946	0.575	0.578	0.161	0.181	4.888	8.799	
PPARA	373	19,399	0.783	0.778	0.262	0.280	6.693	7.764	
PPARD	240	12,250	0.547	0.544	0.078	0.098	1.665	2.498	
PPARG	484	25,299	0.515	0.605	0.055	0.118	0.619	4.955	
PRGR	293	15,648	0.740	0.793	0.142	0.318	2.053	14.714	
PTN1	130	7,249	0.398	0.538	0.055	0.090	0.000	3.068	
PUR2	50	2,700	0.851	0.837	0.281	0.255	7.857	1.964	

(continued...)

Target	No.	No.	ROC	ROC	BEDRO	CBEDRO	C EF _{1%}	EF _{1%}	
	of	of	AUC	AUC	Tani-	Tver-	Tani-	Tver-	
	Ac-	De-	Tani-	Tver-	moto	sky	moto	sky	
	tives	coys	moto	sky					
PYGM	77	3,944	0.403	0.492	0.016	0.137	0.000	3.917	
PYRD	111	6,449	0.682	0.710	0.462	0.413	34.027	16.118	
RENI	104	6,956	0.720	0.789	0.043	0.138	0.000	0.000	
ROCK1	100	6,300	0.347	0.449	0.020	0.084	1.000	4.000	
RXRA	131	6,950	0.788	0.900	0.219	0.596	6.091	27.407	
SAHH	63	3,450	0.874	0.852	0.598	0.542	35.050	27.084	
SRC	524	34,500	0.565	0.477	0.065	0.050	0.382	0.573	
TGFR1	133	8,499	0.609	0.639	0.147	0.154	10.565	4.528	
THB	103	7,450	0.794	0.762	0.238	0.150	10.614	0.965	
THRB	461	27,000	0.605	0.706	0.063	0.166	2.166	5.632	
TRY1	449	25,975	0.711	0.815	0.147	0.280	2.898	6.688	
TRYB1	148	7,650	0.670	0.670	0.153	0.132	3.378	3.378	
TYSY	109	6,745	0.594	0.725	0.071	0.226	0.911	5.468	
UROK	162	9,850	0.525	0.650	0.036	0.120	0.000	1.854	
VGFR2	409	24,948	0.632	0.578	0.083	0.093	1.465	1.465	
WEE1	102	6,150	0.934	0.929	0.789	0.797	59.348	61.294	
XIAP	100	5,150	0.752	0.974	0.190	0.897	8.077	51.490	

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.

2.9 | A Landscape Table Example

Next is an example of a wide table on a landscape oriented paper (Table 2.3).

Table 2.3: A table in landscape orientation.

m	х	y	z	а	A_m	В	С	x	y	z	а	A_m	В	С
1	16.128	+8.872	16.128	1.402	1.373	-146.6	-137.6	16.128	+8.872	16.128	1.402	1.373	-146.6	-137.6
2	3.442	-2.509	3.442	0.299	0.343	133.2	152.4	3.442	-2.509	3.442	0.299	0.343	133.2	152.4
3	1.826	-0.363	1.826	0.159	0.119	168.5	-161.1	1.826	-0.363	1.826	0.159	0.119	168.5	-161.1
4	0.993	-0.429	0.993	0.086	0.08	25.6	90	1.826	-0.363	1.826	0.159	0.119	168.5	-161.1
5	1.29	+0.099	1.29	0.112	0.097	-175.6	-114.7	1.826	-0.363	1.826	0.159	0.119	168.5	-161.1
6	0.483	-0.183	0.483	0.042	0.063	22.3	122.5	1.826	-0.363	1.826	0.159	0.119	168.5	-161.1
7	0.766	-0.475	0.766	0.067	0.039	141.6	-122	1.826	-0.363	1.826	0.159	0.119	168.5	-161.1
8	0.624	+0.365	0.624	0.054	0.04	-35.7	90	1.826	-0.363	1.826	0.159	0.119	168.5	-161.1
9	0.641	-0.466	0.641	0.056	0.045	133.3	-106.3	1.826	-0.363	1.826	0.159	0.119	168.5	-161.1
10	0.45	+0.421	0.45	0.039	0.034	-69.4	110.9	1.826	-0.363	1.826	0.159	0.119	168.5	-161.1
11	0.598	-0.597	0.598	0.052	0.025	92.3	-109.3	1.826	-0.363	1.826	0.159	0.119	168.5	-161.1

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.

2.10 | A Theorem Example

Theorem 2.10.1. Let f be a function whose derivative exists in every point, then f is a continuous function.

Theorem 2.10.2 (Pythagorean theorem). This is a theorem about right triangles and can be summarised in the next equation

$$x^2 + y^2 = z^2$$

And a consequence of Theorem 2.10.2 is the statement in the next corollary.

Corollary 2.10.2.1. There's no right rectangle whose sides measure 3 cm, 4 cm, and 6 cm.

You can reference theorems such as 2.10.2 when a label is assigned.

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.

2.11 | A Lemma Example

Lemma 2.11.1. Given two line segments whose lengths are a and b respectively there is a real number r such that b = ra.

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.

2.12 | A Proof Example

Lemma 2.12.1. Given two line segments whose lengths are a and b respectively there is a real number r such that b = ra.

Proof. To prove it by contradiction try and assume that the statement is false, proceed from there and at some point you will arrive to a contradiction. \Box

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.

2.13 | A Listing Example

Here you go.

```
import numpy as np

def incmatrix(genl1,genl2):

m = len(genl1)

n = len(genl2)

M = None #to become the incidence matrix

VT = np.zeros((n*m,1), int) #dummy variable

#compute the bitwise xor matrix

M1 = bitxormatrix(genl1)

M2 = np.triu(bitxormatrix(genl2),1)
```

```
for i in range (m-1):
      for j in range(i+1, m):
14
        [r,c] = np.where(M2 == M1[i,j])
15
        for k in range(len(r)):
16
          VT[(i)*n + r[k]] = 1;
          VT[(i)*n + c[k]] = 1;
18
          VT[(j)*n + r[k]] = 1;
19
          VT[(j)*n + c[k]] = 1;
          if M is None:
22
           M = np.copy(VT)
23
24
          else:
           M = np.concatenate((M, VT), 1)
25
26
27
          VT = np.zeros((n*m, 1), int)
    return M
```

Listing 2.1: My Listing Caption

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.

2.14 | An Algorithm Example

An algorithm example is shown in Algorithm 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.

Algorithm 1: An algorithm with caption

```
Data: n > 0
Result: y = x^n
y \leftarrow 1;
X \leftarrow x;
N \leftarrow n;
while N \neq 0 do
    if N is even then
         X \leftarrow X \times X;
         N \leftarrow \frac{N}{2};
                                                                  /* This is a comment */
    else
         if N is odd then
             y \leftarrow y \times X;
             N \leftarrow N-1;
         end
    end
end
```

2.15 | Some Technique One

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.

2.15.1 | Some Sub-technique One

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

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2.15.1.1 | Some Sub-sub-technique One

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 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.

2.16 | Some Technique Two with Super Long Title Which Will Overrun In Header

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

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Imagine some colourful description on Some Technique Three.

2.17 | Evaluation Criteria

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

2.18 | 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)

For references use IEEE style (IEEE Ref. Guide) or Harvard style (Harvard Ref. Guide).

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).

2.19 | An Example of Suppressing Page Numbers on A Float Page

Kindly refer to Figure 2.3.

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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2.20 | Summary

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 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 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.



Figure 2.3: Page numbers are suppressed on this page.

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.

3.1 | Summary

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

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.

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.

This is the second 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.

After this fourth paragraph, we start a new paragraph sequence. 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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4.1 | Summary

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.

This is the second 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.

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.

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.

This is the second 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.

5.1 | Summary

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 | Revisiting the 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

6.3 | Future Work

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.

6.4 | Final Remarks

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.

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 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 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 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 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.

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. 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! 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User Manual

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.

After this fourth paragraph, we start a new paragraph sequence. 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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This is the second 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

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