

Main Title of Thesis

Sub Title of Thesis



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Abstract

The Thesis Abstract is written here (and usually kept to just this page). The page is kept centred vertically so can expand into the blank space above the title too ...

Acknowledgements

The acknowledgements and the people to thank go here, don't forget to include any support you may have received from family and friends . . .

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Acronyms

CA Consensus Algorithms. 5

PoET Proof of Elapsed-Time. 5

PoS Proof of Stake. 5

PoW Proof of Work. 5

Chapter 1

Introduction

1.1 Background

Include a few words here about the background and motivation of the project.

This can be helped by explaining what has happened in the past; what you are going to do in the present; and how this action will help and change the future.

1.2 Aims

This should be a general aim of the overall project. This should be explained in one or two paragraphs.

1.2.1 Objectives

These are a list of clearly defined objectives that can be aligned to outcomes in the project. We can define the success of the project based on these fulfilling these objectives.

- Research
- Explore Hypotheses
- Design Experimental Framework
- Run experiments under Experiment Framework and test hypotheses
- Analyse Results
- Provide detailed recommendations and guidelines

1.2.2 Deliverables

Deliverables are a result of actions that complete and attempt to satisfy objectives and can include:

- Complete proposal
- Complete Research Ethics approval
- Complete research on specified related area
- Complete research on another specified related area
- Complete Literature Review
- Conduct Experiments under completed Designed Experimental Framework
- Complete Software Development
- Complete Experiments based on Experimental Framework
- Collate and gather information and data from Experiments
- Analyse Results and complete write-up of results
- Complete Conclusions
- Complete Turn-it-in submission
- Print, bind and submit two hard copies to Unihelpdesk.

1.3 Resources

List any software or hardware that may be required for the completion of the project.

- Forensic ToolKit
- The Sleuth Kit
- Laptop
- 10 1Gb memory sticks
- 2 128Gb SSD
- FTK Imager

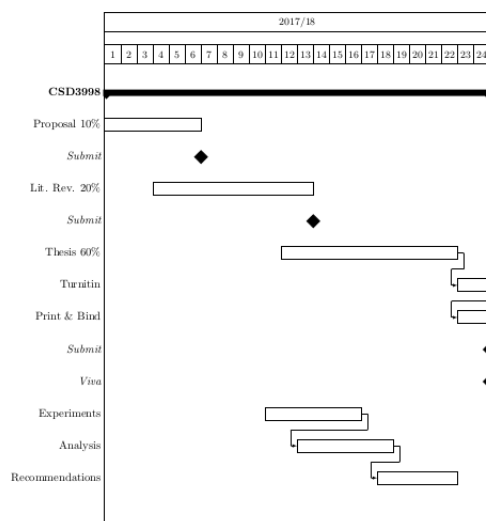


Figure 1.1: GANTT Chart showing indicative milestones.

1.4 Schedule

Typically include a GANTT chart indicating when the objectives and deliverables are met.

This can be completed by Excel or other dedicated software and then imported into this document as shown in Fig.1.1.

1.5 Summary

Optional, but this section could outline and emphasise the structure of the thesis. It could also be used to emphasise what the project is about and can sometimes be used to disambiguate any areas, e.g., your project may look into applying text mining to e-discovery and you may want to emphasise that this is an application and not a project on text mining.

The structure of the rest of this thesis (never refer to the thesis as a paper and always write in third person) is as follows: Chapter 2 covers the literature review and current research related to the problem; Chapter 3 investigates the experiment and rationalises the method undertaken; Chapter 4 analyses the results; and Chapter 5 includes the recommendations and conclusions.

Chapter 2

Literature Review

2.1 Introduction

Outlining the main area you are researching. This may also include any motivation for investigation.

2.2 Subject

You can divide your Literature Review into several sections, one for each topic/area you are reviewing.

2.2.1 title

Each subject area will probably be broken down to several subsections.

title

It is generally unnecessary to go further than the subsection level, however, in rare circumstances the subsubsection command can be used.



Figure 2.1: Test caption number

2.3 Citation & Reference

Exercises show there are two parts to a citation: the citation; and the reference. There are many styles and configurations of the citations and references, which the exercises will make clear.

Essentially, to start with, we are going to keep this simple and use the plain bibliography setting. As we advance the national bibliography package can be used and this is in the exercises on citations. This setting orders all bibliography items in alphabetical order and only uses the cite command. It does have its restrictions and we will come across these and how to cope with them. The following is an example paragraph using citations and a plain bibliography and should be adequate to get us started.

The first generation of Neural Networks are generally considered as Perceptrons [4]. Minsky and Papert [3] wrote a critique of the perceptron which showed that it could not solve non-linear problems, typically XOR. To solve the non-linear problem Rumelhart, Hinton and Williams [5] made an enormous contribution with the Back-propagation error Artificial Neural Network, ANN. This and related ANN are generally referred to as second generation and inspire many of the techniques used in machine learning. The third generation of neural networks are based on biologically-inspired neurons and are generally referred to as, “spiking neurons”. Oddly many third generations are based on research pre-dating to first and second generations, namely Hebbian Learning [1]. These spiking neurons can be built into bigger networks to solve complex problems, e.g., see [2].

2.4 Example of glossary

There are several blockchain Consensus Algorithms (CA) but three of interest are: Proof of Elapsed-Time (PoET), Proof of Work (PoW) and Proof of Stake (PoS).

PoET is fast and can only be used on permission blockchains. PoW is computationally expensive and can be used on permissionless blockchains, many researchers have commented that PoW is unsustainable. PoS is less computationally expensive and can be used on permissionless blockchain technology.

2.5 Summary

Conclude on your main findings and how they are going to contribute to solving objectives.

This thesis is an outline and can be deviated from. For example, it would be completely justified to have two Literature Review Chapters, if the subject areas are unrelated and completely separate. Often new research can be considered as two subject areas merged together to form a new area, e.g., text-mining and e-discovery. This would result in two literature review chapters: i) text-mining; and ii) e-discovery.



Figure 2.2: Test caption number

Chapter 3

Method

3.1 Introduction

Go over the objectives of the experiment relying on new research in your literature review.

3.2 Experiment 1

Many Experiment Frameworks require two experiments, one with x , the other without. These are often referred to as control experiments.

3.3 Experiment 2

All experiments are repeated for reproducibility, you need to show how each stage of the experiment is designed to help prove or disprove your hypothesis.

3.4 Summary

You have no results, however, you have a clear and concise experiment to run. With your knowledge from Literature Review you can mention the expected outcomes of each experiment.

Chapter 4

Analysis & Results

4.1 Introduction

Include any set up for the experiment. This could be as follows:

- Architecture: x86_64
- CPU op-mode(s): 32-bit, 64-bit
- Byte Order: Little Endian
- CPU(s): 4
- On-line CPU(s) list: 0-3
- Thread(s) per core: 2
- Core(s) per socket: 2
- Vendor ID: GenuineIntel
- CPU family: 6
- Model: 61
- CPU MHz: 500.000
- RAM: 8Gb

4.2 Experiment 1

Use graphics to display results. Most results can be shown in tables. Use package longtables if you have trouble getting all data into a single page. Remember to label and reference the table.

Run	x	y	z	Time/ms
1	100	2.5	1.06	60000
2	200	4.5	1.45	50000
3	500	5.5	1.5	40000

Table 4.1: Experiment 1 Results

Run	x	y	z	Time/ms
1	100	2.5	1.06	60000
2	200	4.5	1.45	50000
3	500	5.5	1.5	40000

Table 4.2: Experiment 2 Results

4.3 Experiment 2

Experiment 2 should differ from Experiment 1. Each experiment should be repeated a number of times for reproducibility. Do not confuse Experiment 2 as a repeat of Experiment 1, they are different.

4.4 Summary

Bad results happen, but it is not bad science. Still write up the results. If given time run more experiments. Rejecting or accepting an hypothesis is still a result worth writing up.

Good results will yield a clear direction and give clear recommendations and guidelines that can be mentioned here and emphasised in the next chapter - it is OK to repeat.

Chapter 5

Conclusions

5.1 Introduction

The most important chapter. This is where you state your main contribution. Computer Science and Computer Forensics is unlike many other topics, you can become an expert in a small area of computing, say FAT file systems in a matter of months. What you are studying, not only should you enjoy, but you should be an expert in. In Medicine it could take 20 years to be an expert in some fields. Have all your aims and objectives been met, if so where and how did you prove them?

5.2 Recommendations

This expertise should leave you to some insight and recommendations based on your knowledge of the subject and your results. These are mentioned here.

5.3 Future Work

Any new areas this research could lead to.

5.4 Reflections

How would you complete this project again?

5.5 Summary

Odd to have a summary in a chapter entitled conclusion, however, the purpose of this is to end on a high note. Your reader will have been examining and assessing this thesis for some time and you need to finish it on a high note.

Make it succinct and punchy. You should include: the aims and objectives; the hypothesis; any outcomes; any development; accept or reject hypothesis; results; any recommendations; and finally your main contribution.

Bibliography

- [1] D. Hebb, *The Organization of Behavior*. John Wiley and Sons, 1949.
- [2] C. R. Huyck and I. G. Mitchell, “Compensatory hebbian learning for categorisation in simulated biological neural nets,” *Biologically Inspired Cognitive Architectures*, vol. 6, pp. 3–7, 2013.
- [3] M. Minsky and S. A. Papert, “Perceptrons,” *Cambridge, MA: MIT Press*, vol. 6, no. 318-362, p. 7, 1969.
- [4] F. Rosenblatt, “The perceptron: a probabilistic model for information storage and organization in the brain.” *Psychological review*, vol. 65, no. 6, p. 386, 1958.
- [5] D. E. Rumelhart, G. E. Hinton, and R. J. Williams, “Learning representations by back-propagating errors,” *Cognitive modeling*, vol. 5, no. 3, p. 1, 1988.

Appendices

Appendix A

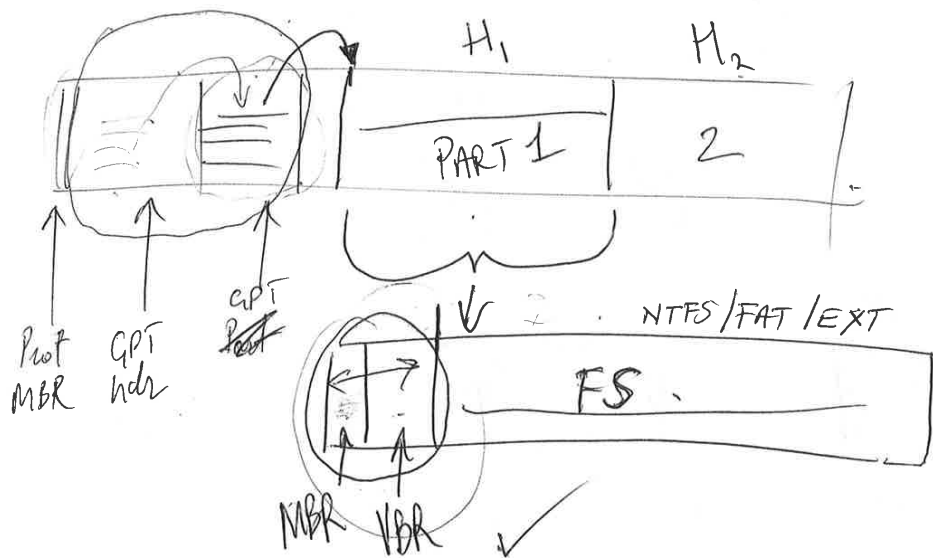
Correspondence with Supervisor

24/11/2016.

— TRIM

— works when removing GPT header & part

— does not work when removing protected MBR...



— removal/deconstruction of "GPT" does not preserve state of the part.

① ~~data~~ decon GPT X — evidence — facts

② decon each MBR/VBR ✓

Appendix B

Ethical Approval

Do not amend before use



Research Ethics Screening Form for Students
Only for students on taught programmes – e.g., BSc, MSc, MA, LLM etc
NOT for PostGraduate Researchers – e.g., MRes/MPhil/PhD degrees

Middlesex University is concerned with protecting the rights, health, safety, dignity, and privacy of its research participants. It is also concerned with protecting the health, safety, rights, and academic freedom of its students and with safeguarding its own reputation for conducting high quality, ethical research.

This Research Ethics Screening Form will enable students to self-assess and determine whether the research requires ethical review and approval via the Middlesex Online Research Ethics (MORE) form before commencing the study. Supervisors must approve this form after consultation with students.

Student Name:	X.X	Email: XX@live.mdx.ac.uk
Research project title:	Xxxx	
Programme of study/module:	CST3590	
Supervisor Name:	XX	Email:XX@mdx.ac.uk

<i>Please answer whether your research/study involves any of the following given below:</i>		
1. ^H ANIMALS or animal parts.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
2. ^M CELL LINES (established and commercially available cells - biological research).	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
3. ^H CELL CULTURE (Primary: from animal/human cells- biological research).	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
4. ^H CLINICAL Audits or Assessments (e.g. in medical settings).	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
5. ^X CONFLICT of INTEREST or lack of IMPARTIALITY. If unsure see "Code of Practice for Research" (Sec 3.5) at: https://unihub.mdx.ac.uk/study/spotlights/types/research-at-middlesex/research-ethics	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
6. ^X DATA to be used that is not freely available (e.g. secondary data needing permission for access or use).	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
7. ^X DAMAGE (e.g., to precious artefacts or to the environment) or present a significant risk to society).	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
8. ^X EXTERNAL ORGANISATION – research carried out within an external organisation or your research is commissioned by a government (or government body).	<input type="checkbox"/> Yes	<input type="checkbox"/> No
9. ^M FIELDWORK (e.g biological research, ethnography studies).	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
10. ^H GENETICALLY MODIFIED ORGANISMS (GMOs) (biological research).	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
11. ^H GENE THERAPY including DNA sequenced data (biological research).	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
12. ^M HUMAN PARTICIPANTS – ANONYMOUS Questionnaires (participants not identified or identifiable).	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
13. ^X HUMAN PARTICIPANTS – IDENTIFIABLE (participants are identified or can be	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

1/2

University Ethics Committee (Dr Carlisle George) - Ver 6, August 2024

Do not amend before use



identified): survey questionnaire/ INTERVIEWS / focus groups / experiments / observation studies/ evaluation studies.		
14. ^H HUMAN TISSUE (e.g., human relevant material, e.g., blood, saliva, urine, breast milk, faecal material).	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
15. ^H ILLEGAL/HARMFUL activities research (e.g., development of technology intended to be used in an illegal/harmful context or to breach security systems, searching the internet for information on highly sensitive topics such as child and extreme pornography, terrorism, use of the DARK WEB, research harmful to national security).	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
16. ^X PERMISSION is required to access premises or research participants.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
17. ^X PERSONAL DATA PROCESSING (Any activity with data that can directly or indirectly identify a living person). For example data gathered from interviews, databases, digital devices such as mobile phones, social media or internet platforms or apps with or without individuals'/owners' knowledge or consent, and/or could lead to individuals/owners being IDENTIFIED or SPECIAL CATEGORY DATA (GDPR ¹) or CRIMINAL OFFENCE DATA. <small>¹Special category data (GDPR- Art.9): "personal data revealing racial or ethnic origin, political opinions, religious or philosophical beliefs, or trade union membership, and the processing of genetic data, biometric data for the purpose of uniquely identifying a natural person, data concerning health or data concerning a natural person's sex life or sexual orientation".</small>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
18. ^X PUBLIC WORKS DOCTORATES: Evidence of permission is required for use of works/artifacts (that are protected by Intellectual Property (IP) Rights, e.g. copyright, design right) in a doctoral critical commentary when the IP in the work/artifacts jointly prepared/produced or is owned by another body	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
19. ^H RISK OF PHYSICAL OR PSYCHOLOGICAL HARM (e.g., TRAVEL to dangerous places in your own country or in a foreign country (see https://www.gov.uk/foreign-travel-advice), research with NGOs/humanitarian groups in conflict/dangerous zones, development of technology/agent/chemical that may be harmful to others, any other foreseeable dangerous risks).	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
20. ^X SECURITY CLEARANCE – required for research.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
21. ^X SENSITIVE TOPICS (e.g., anything deeply personal and distressing, taboo, intrusive, stigmatising, sexual in nature, potentially dangerous, etc).	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

M – Minimal Risk; X – More than Minimal Risk. H – High Risk

If you have answered 'Yes' to ANY of the items in the table, your application **REQUIRES** ethical review and approval using the MOREform **BEFORE commencing your research**. Please apply for ethical approval using the MOREform (<https://moreform.mdx.ac.uk/>). Consult your supervisor for guidance. Also see *Middlesex Online Research Ethics* (MyLearning area) and www.tiny.cc/mdx-ethics.

If you have answered 'No' to ALL of the items in the table, your application is Low Risk and you may NOT require ethical review and approval using the MOREform before commencing your research. Your research supervisor will confirm this below.

Student Signature:...XX... Date: January 202X

To be completed by the supervisor:

2/2

University Ethics Committee (Dr Carlisle George) - Ver 6, August 2024

Do not amend before use



<i>Based on the details provided in the self-assessment form, I confirm that:</i>	Insert Y or N
The study is Low Risk and <i>does not require</i> ethical review & approval using the MOREform	Y
The study <i>requires</i> ethical review and approval using the MOREform.	N

Supervisor Signature: XX

Date: January 202X