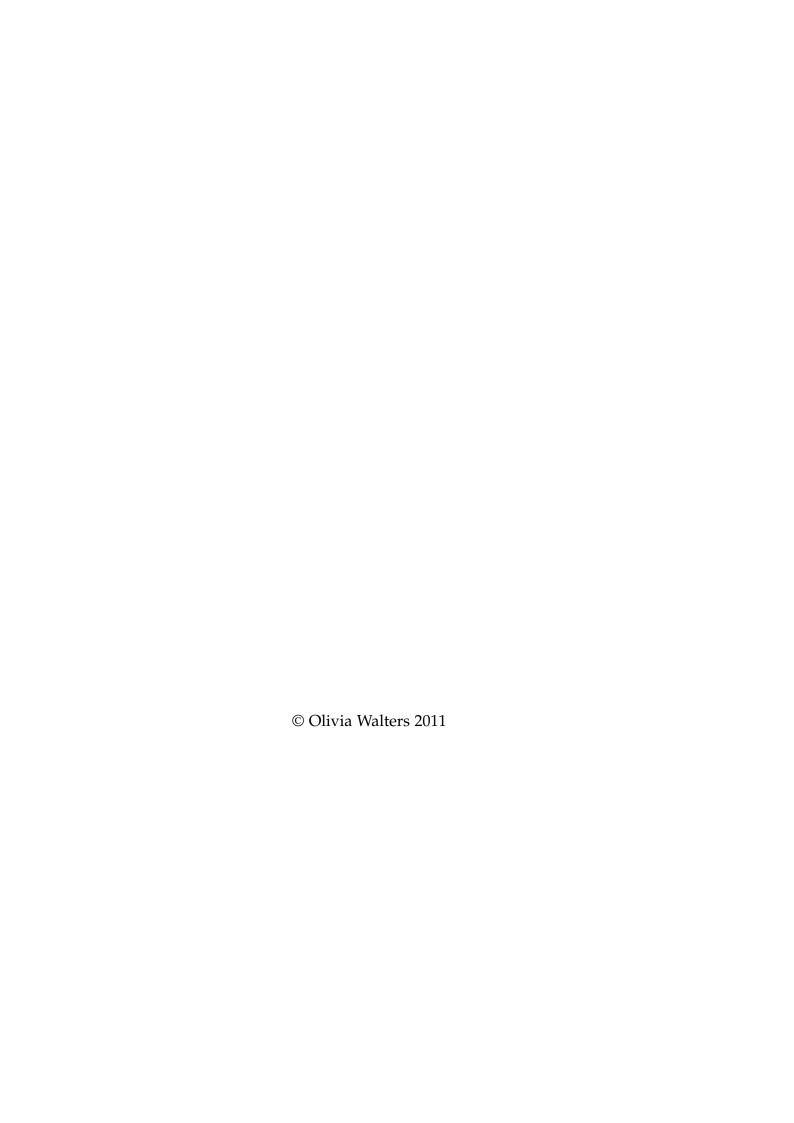
# Measuring the presence of magnetic fields in the circumgalactic medium and around HVCs using the POSSUM survey

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An honours thesis submitted for The Australian National University Research School of Astronomy and Astrophysics

February 2024



Except where otherwise indicated, this thesis is my own original work. Olivia Walters 16 February 2024



# Acknowledgments

Who do you want to thank?

## **Abstract**

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# Introduction

## 1.1 Thesis Statement

I believe A is better than B.

#### 1.2 Introduction

Put your introduction here. You could use \fix{ABCDEFG.} to leave your comments, see the box at the left side.

You have to rewrite your thesis!!!

## 1.3 Thesis Outline

How many chapters you have? You may have Chapter 2, Chapter 3, Chapter 4, Chapter 5, and Chapter 6.

# **Background and Related Work**

At the begging of each chapter, please introduce the motivation and highlevel picture of the chapter. You also have to introduce sections in the chapter.

Section 2.1 xxxx.

Section 2.2 yyyy.

#### 2.1 Motivation

#### 2.2 Related work

You may reference other papers. For example: Generational garbage collection [Lieberman and Hewitt, 1983; Moon, 1984; Ungar, 1984] is perhaps the single most important advance in garbage collection since the first collectors were developed in the early 1960s. (doi: "doi" should just be the doi part, not the full URL, and it will be made to link to dx.doi.org and resolve. shortname: gives an optional short name for a conference like PLDI '08.)

#### 2.3 Summary

Summary what you discussed in this chapter, and mention the story in next chapter. Readers should roughly understand what your thesis takes about by only reading words at the beginning and the end (Summary) of each chapter.

# **Design and Implementation**

Same as the last chapter, introduce the motivation and the high-level picture to readers, and introduce the sections in this chapter.

## 3.1 Smart Design

## 3.2 Summary

Same as the last chapter, summary what you discussed in this chapter and be the bridge to next chapter.

# **Experimental Methodology**

## 4.1 Software platform

## 4.2 Hardware platform

Table 4.1 shows how to include tables and Figure 4.1 shows how to include codes.

Architecture	Pentium 4	Atom D510	i7-2600
Model	P4D 820	Atom D510	Core i7-2600
Technology	90nm	45nm	32nm
Clock	2.8GHz	1.66GHz	3.4GHz
$Cores \times SMT$	$2 \times 2$	$2 \times 2$	4  imes 2
L2 Cache	$1MB \times 2$	$512KB \times 2$	$256KB \times 4$
L3 Cache	none	none	8MB
Memory	1GB DDR2-400	2GB DDR2-800	4GB DDR3-1066

Table 4.1: Processors used in our evaluation.

```
int main(void)

from the main(void)

printf("Hello_World\n");

return 0;

woid main(String[] args)

System.out.println("Hello_World");

b)

(b)
```

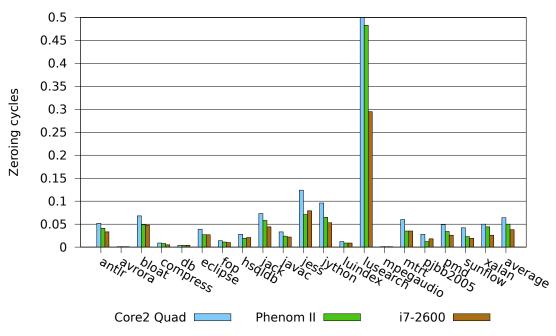
Figure 4.1: Hello world in Java and C.

# Results

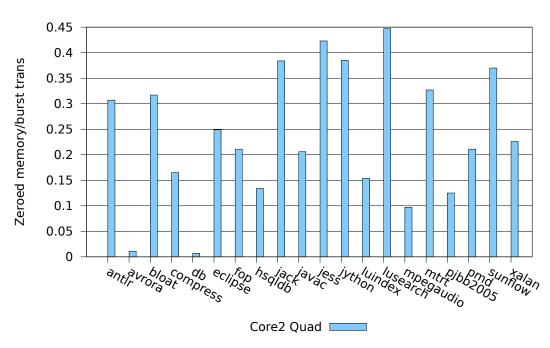
## 5.1 Direct Cost

Here is the example to show how to include a figure. Figure 5.1 includes two subfigures (Figure 5.1(a), and Figure 5.1(b));

## 5.2 Summary



(a) Fraction of cycles spent on zeroing



 $(b) \ BytesZeroed \ / \ BytesBurstTransactionsTransferred$ 

Figure 5.1: The cost of zero initialization

# Conclusion

Summary your thesis and discuss what you are going to do in the future in Section 6.1.

## 6.1 Future Work

Good luck.

# **Bibliography**

LIEBERMAN, H. AND HEWITT, C., 1983. A real-time garbage collector based on the lifetimes of objects. *Communications of the ACM*, 26, 6 (Jun. 1983), 419–429. doi:10.1145/358141.358147. (cited on page 2)

Moon, D. A., 1984. Garbage collection in a large LISP system. In LFP '84: *Proceedings of the 1984 ACM Symposium on LISP and Functional Programming* (Austin, Texas, USA, Aug. 1984), 235–246. ACM, New York, New York, USA. doi:10.1145/800055.802040. (cited on page 2)

UNGAR, D., 1984. Generation scavenging: A non-disruptive high performance storage reclamation algorithm. In SDE 1: *Proceedings of the 1st ACM SIG-SOFT/SIGPLAN Software Engineering Symposium on Practical Software Development Environments* (Pittsburgh, Pennsylvania, USA, Apr. 1984), 157–167. ACM, New York, New York, USA. doi:10.1145/800020.808261. (cited on page 2)