

ALLEGHENY COLLEGE  
DEPARTMENT OF COMPUTER SCIENCE

Senior Thesis

---

Thesis Title

---

by

**Author Name**

ALLEGHENY COLLEGE

---

COMPUTER SCIENCE

Project Supervisor: **First Reader**  
Co-Supervisor: **Second Reader**

November 5, 2019

# Abstract

## Thesis Title

Provide a concise summary of your proposed research of approximately 250 words. Remember that the abstract is *not* an introduction, it is a *summary* of the entire document. It makes sense to wait to write the abstract until the rest of the document has been written.

# Acknowledgment

Theses must acknowledge assistance received in any of the following areas:

- Designing the research
- Executing the research
- Analyzing the data
- Interpreting the data/research
- Writing, proofing, or copyediting the manuscript

# Abbreviations

All abbreviations used in the thesis should be listed here, with their definitions, in alphabetical order. This includes trivial and commonly used abbreviations (at your own discretion), but not words that have entered into general English usage (such as laser or DNA). In particular, non-standard abbreviations should be presented here. This is an aid to the reader who may not read all sections of the thesis.

PPT	positive partial transpose
SRPT	Schrödinger-Robertson partial transpose

# Glossary

Dipole Blockade	Phenomenon in which the simultaneous excitation of two atoms is inhibited by their dipolar interaction.
Cavity Induced Transparency	Phenomenon in which a cavity containing two atoms excited with light at a frequency halfway between the atomic frequencies contains the number of photons an empty cavity would contain.

If desired, an optional and short dedication may be  
included here.

# Contents

<b>Abstract</b>	<b>i</b>
<b>Acknowledgment</b>	<b>ii</b>
<b>Abbreviations</b>	<b>iii</b>
<b>Glossary</b>	<b>iv</b>
<b>Contents</b>	<b>vi</b>
<b>List of Figures</b>	<b>vii</b>
<b>List of Tables</b>	<b>viii</b>
<b>1 Introduction</b>	<b>3</b>
1.1 Motivation . . . . .	3
1.2 Current State of the Art . . . . .	3
1.3 Goals of the Project . . . . .	3
1.4 Thesis Outline . . . . .	3
<b>2 Related Work</b>	<b>5</b>
<b>3 Method of Approach</b>	<b>7</b>
<b>4 Experimental Results</b>	<b>9</b>
4.1 Experimental Design . . . . .	9
4.2 Evaluation . . . . .	9
4.3 Threats to Validity . . . . .	9
<b>5 Discussion and Future Work</b>	<b>11</b>
5.1 Summary of Results . . . . .	11
5.2 Future Work . . . . .	11
5.3 Conclusion . . . . .	11
<b>Bibliography</b>	<b>12</b>

# List of Figures



# List of Tables

## Template Overview

You should first modify the documents in the preamble, things that appear before the main text as detailed below.

**Front page:** use the one provided in this template, after changing the values like names in the file `preamble/mydefinitions.tex`.

**Abstract:** There should be a single paragraph of about 250 words, which concisely summarizes the entire proposal, written in the file `preamble/abstract.tex`.

**Acknowledgments, Abbreviations, Glossary, Dedication** preamble pages are optional and can be used at the author's discretion.

The main text of the proposal should be stored in the "SeniorThesis.tex" document. The following descriptions are sections that must be included in the thesis document.

---

Introduction

# Chapter 1

## Introduction

This is the introduction. It should describe your completed senior thesis work, including the overall aims and the background motivating your research. Whenever possible, you should use one or more concrete examples and technical diagrams.

It is often useful and necessary to separate the introduction into multiple section. Several possible sections are proposed below, you can use these or distribute your introductory text into sections in another way.

### 1.1 Motivation

### 1.2 Current State of the Art

### 1.3 Goals of the Project

### 1.4 Thesis Outline

Related Work

## Chapter 2

### Related Work

This chapter should include a broad and detailed review of relevant existing work. The literature review should provide background and context for the thesis work. The subsections may be organized in whatever manner seems best suited to the material—chronological, or by topic, or according to some other criteria (e.g., primary versus secondary resources).

---

## Method Of Approach

# Chapter 3

## Method of Approach

This chapter should answer the “how” question - how did you complete your project, including the overall design of your study, details of the algorithms and tools you have used, etc. Use technical diagrams, equations, algorithms, and paragraphs of text to describe the research that you have completed. Be sure to number all figures and tables and to explicitly refer to them in your text.



---

## Experimental Results

# Chapter 4

## Experimental Results

This chapter should describe your experimental set up and evaluation. It should also produce and describe the results of your study. Possible section titles are given below.

### 4.1 Experimental Design

### 4.2 Evaluation

### 4.3 Threats to Validity

Conclusion

# Chapter 5

## Discussion and Future Work

This is the conclusion. You might want to leave it unnumbered, as it is now. If you want to number it, treat it like any other chapter.

This chapter usually contains the following items, although not necessarily in this order or sectioned this way in particular.

### 5.1 Summary of Results

A discussion of the significance of the results and a review of claims and contributions.

### 5.2 Future Work

### 5.3 Conclusion

**Bibliography:** The bibliography should include all references cited in the text (as [1]) and it should not include references that have not been cited. ACM referencing style should be used when preparing the bibliography. We recommend using BibTeX or BibLaTeX and using the file `preamble/bibliography.bib`.

# Bibliography

- [1] DASGUPTA, P., BACA, J., GURUPRASAD, K., MUÑOZ-MELÉNDEZ, A., AND JUMADINOVA, J. The comrade system for multirobot autonomous landmine detection in postconflict regions. *Journal of Robotics 2015* (2015).