Type the title of the work here [Upper Case]

By

**[Firstname Lastname]**

A thesis submitted to the Graduate Committee of

Ramapo College of New Jersey in partial fulfillment

of the requirements for the degree of

Master of Science in DataScience/ComputerScience

[Term, Year]

Committee Members:

[Firstname Lastname], Advisor

[Firstname Lastname], Reader

[Firstname Lastname], Reader

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[YEAR]

# **DEDICATION**

This is an optional page

**ACKNOWLEDGEMENTS**

This is an optional page

# **DECLARATION**

I hereby declare that this thesis is the result of my own investigations, except where otherwise stated, is in accordance with Ramapo College's academic integrity policies, and the AI policy for Data, Mathematical, and Computational Sciences (DMC) Master’s Thesis. I also declare that it has not been previously or concurrently submitted as a whole for any other degree at Ramapo College of New Jersey or other institutions.

**Student’s Name**

**Signature: ...........................................................  Date: ............................**

**APPROVAL PAGE**

The thesis of [Student Full Name] has been approved by the following:

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First Name Last Name

**Advisor**

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First Name Last Name

**Reader 1**

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First Name Last Name

**Reader 2**

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# **LIST OF ABBREVIATIONS**

**Formatting Guidelines:**

* Use **two aligned columns**:
  + Left column for the **abbreviation** (e.g., "AI")
  + Right column for the **full term** (e.g., "Artificial Intelligence")
* Keep the list **alphabetically ordered** by the abbreviation.
* Maintain consistent formatting (font, spacing, alignment) with other front matter sections.

**Example:**

**List of Abbreviations**

AI Artificial Intelligence

CNN Convolutional Neural Network

IoT Internet of Things

ML Machine Learning

**Notes:**

* Only include abbreviations that are used more than once or are essential for understanding.
* Do **not** include standard measurement units (e.g., kg, cm) unless relevant to the research domain.

# **ABSTRACT**

[This part consists of a thesis description within one page (up to 500 words).

The abstract shall generally consist of the following components:

Problem: What you tackled and why this needed a solution.

Objectives: What you set out to achieve, and how this addressed the problem.

Methodology: How you went about solving the problem.

Achievements: What you managed to achieve and how far it meets your objectives.

Conclusion: Discussing wider implications of the result]

# **CHAPTER 1**

**INTRODUCTION**

## **1.1 Overview**

This section provides a general introduction to the thesis topic. The student should present a high-level summary of the research area, introduce key concepts and terminology, and offer essential background information to help readers understand the context of the work. The goal is to facilitate comprehension and offer a foundation for the discussions that follow in subsequent chapters.

## **1.2 Problem Statement**

The student should clearly present the research problem addressed in the thesis. This includes:

* Reviewing relevant previous work and highlighting its limitations or gaps.
* Justifying the significance and relevance of the problem in real-world applications or academic discourse.
* Providing illustrative examples or scenarios to support the need for addressing the problem.

This section must convincingly argue ***why*** the problem matters and ***why*** it deserves attention.

## **1.3 Research Questions**

This section should list the key research questions that the thesis aims to answer. These questions must directly relate to the problem identified in Section 1.2. The student is advised to present these questions in bullet-point format for clarity. For example:

* What are the limitations of existing approaches in solving the identified problem?
* How can [Proposed Method/Framework] improve upon the current solutions?

## **1.4 Research Objectives**

This section outlines the specific objectives the research intends to achieve. Each objective should logically stem from the problem statement and address one or more of the research questions. The objectives should be concise, actionable, and presented in bullet-point format. For example:

* To design and develop a novel approach for…
* To evaluate the effectiveness of the proposed method against existing benchmarks.

## **1.5 Scope of the Research**

This section defines the boundaries and limitations of the research. The student should specify what is included and excluded from the study. This helps manage reader expectations and ensures the work is appropriately contextualized. Present the scope items in bullet-point format. For example:

· The research focuses on…

· This study does not cover…

## **1.6 Significance/Contributions of the Research**

The student should summarize the key contributions and highlight the significance of the thesis. Contributions may be theoretical, methodological, or practical. It is recommended to use a bullet-point format. For example:

· Introduced a new/revised/improved/enhanced model for…

· Demonstrated improved performance over existing techniques…

## **1.7 Organization of the Thesis**

This section provides a roadmap for the thesis structure. The student should briefly summarize the contents and purpose of each chapter. A sample description might look like:

**Chapter 1** introduces the research problem, outlines the research questions and objectives, and presents the scope and contributions.

**Chapter 2** provides a comprehensive literature review and necessary background, identifying relevant works and contextualizing the research problem.

**Chapter 3** describes the research methodology, including the design of experiments, data collection procedures, and development of the proposed solution.

**Chapter 4** presents the results and analyzes the findings in comparison to existing methods.

**Chapter 5** concludes the thesis by summarizing key contributions and offering recommendations for future work.

# 

# **CHAPTER 2**

**BACKGROUND AND LITERATURE REVIEW**

## **2.1 Introduction**

In this section, the student should provide an overview of the chapter’s content. The introduction sets the stage by outlining the key topics, theories, and concepts that will be covered. A sample template might read:

*"This chapter presents the background and fundamental concepts related to [research topic]. It includes the definition and explanation of [key terms/concepts]. Furthermore, this chapter reviews the existing literature and examines relevant methodologies and techniques pertinent to [research area]. Finally, the chapter discusses the theoretical frameworks and previous research findings that form the foundation for this study."*

The structure of this chapter is as follows: Section 2.2 provides a brief overview of [specific topic or concept]. Section 2.3 addresses [another relevant topic or issue]. Section 2.4 elaborates on [another area, technique, or framework]. Section 2.5 concludes the chapter with a summary of key points.

# **CHAPTER THREE**

**METHODOLOGY**

## **3.1 Introduction**

This chapter outlines the research methodology used to achieve the objectives of the study. It details the overall approach, explains the research design, and describes the specific methods and procedures implemented throughout the research. Additionally, the chapter presents the phases of the proposed framework/model/method, along with the criteria used for evaluation.

The chapter is organized as follows: Section 3.2 provides a detailed explanation of the research methodology adopted in this study. Section 3.3 describes the proposed framework/model/method, including its key components and workflow. Section 3.4 outlines the performance metrics and evaluation criteria used to assess the proposed approach. Section 3.5 discusses the datasets utilized for experimentation and validation purposes. Finally, Section 3.6 summarizes the main points covered in this chapter.

# **CHAPTER FOUR**

**ANALYSIS AND DISCUSSION**

## **4.1 Introduction**

This chapter presents and discusses the results obtained from the experiments conducted to evaluate the proposed approach described in this thesis. It provides a detailed analysis of the performance outcomes and interprets the significance of the findings in relation to the research objectives.

The chapter is organized as follows: Section 4.2 describes the experimental setup, including the parameter settings such as [list key parameters], which were used to evaluate the proposed approach. Section 4.3 presents the experimental results along with a comprehensive performance analysis. This section also includes a detailed discussion interpreting the results in the context of the research goals. Finally, Section 4.4 summarizes the key findings and conclusions of this chapter.

# **CHAPTER FIVE**

**CONCLUSIONS AND FUTURE WORK**

## **5.1 Introduction**

In this section the student should briefly **reintroduce the purpose and scope** of the research and **transition into the final reflections**. It sets the stage for the concluding remarks by summarizing what has been done, without repeating the abstract or earlier chapters in full.

**Example content**

This chapter concludes the thesis by summarizing the key findings and contributions of the research. It revisits the main objectives outlined at the beginning and reflects on how they have been addressed through the methodology and analysis. The chapter also discusses the implications of the results, outlines the limitations of the study, and suggests directions for future research.

## **5.2. Conclusion of Research**

In this section, the student should:

* **Summarize the main findings** in relation to the research objectives or hypotheses.
* **Highlight key insights** or outcomes of the study.
* **Demonstrate how the research has contributed** to the field or filled a knowledge gap.
* **Avoid introducing new data or analysis.**

**Example content:**

This section summarizes the major findings of the research in the context of the objectives set out in the early chapters. The results indicate that [brief summary of key outcomes], which supports the hypothesis that [state hypothesis if relevant]. The study contributes to [mention field or application], offering new perspectives on [specific topic]. Overall, the research successfully addresses the questions it set out to explore and provides a foundation for further investigation.

## **5.3. Future Work**

In this section, the student should:

* **Identify aspects of the research that were beyond the scope** of the current study but are important for future investigation.
* **Suggest improvements or extensions** to the methods, experiments, or analysis used.
* **Propose new research directions** based on findings, gaps, or limitations.
* Ensure that suggestions are **realistic, relevant, and clearly connected** to the current work.

**Example content:**

While this research has addressed the primary objectives, several areas remain open for further exploration. Future studies could extend the current approach by [describe possible improvements or modifications]. Additionally, incorporating [new techniques, datasets, or variables] may provide deeper insights into [specific aspect]. Addressing limitations such as [briefly state limitations] would also enhance the robustness of future findings. It is recommended that subsequent research explore [new questions or directions], which could significantly advance understanding in this area.

# **References**

*Hacking the Thesis*. (n.d.). The Ohio State University. Retrieved February 16, 2022, from https://u.osu.edu/hackingthethesis/managing-stuff/your-content/outline/

If unsure about the referencing style to use, please consult with your thesis advisor.

**Recommended Minimum Number of References**

The thesis should include at least **30 to 50 references**. This range reflects a thorough engagement with relevant literature, including foundational works, recent studies, and key methodologies related to the research topic. More importantly, this range ensures that students conduct an adequate literature review and demonstrate meaningful engagement with existing research, thereby providing a strong foundation for their work. The exact number of references may vary depending on the research area and topic complexity, but this guideline aligns with typical expectations at RCNJ.

# 

# **Appendices**

[You may include one appendix or a number of appendices. If you have more than one appendix, you would write each accordingly (i.e., Appendix A, Appendix B, etc.).

Examples of material included in appendices are as follows:

interview questions

participant letters / forms

surveys / questionnaires

code for replication

supplemental tables / figures / graphs / image

If you do not have any appendices, then delete this page.]

**Tables and Figures Formatting Guidelines**

**This section should be removed from your final thesis document.**

**1. General Rules**

* All tables and figures must be **numbered consecutively** within each chapter (e.g., Table 3.1, Figure 4.2).
* Each table or figure must have a **descriptive caption** that clearly explains its content.
* Tables and figures should be **centered** on the page.
* **Refer to each table/figure in the text** before it appears.
* Use **consistent formatting** for fonts, borders, and alignment.

**2. Tables**

**Formatting:**

* Table number and title should be placed **above the table**.
* Titles should be **brief but descriptive** (sentence case, not all caps).
* Use horizontal lines only for the header and footer of the table (avoid vertical lines).
* Align text **left or center** as appropriate for the content.
* Font size can be slightly smaller than the main text, but must remain readable.

**Example:**

**Table 3.1 Summary of Dataset Characteristics**

|  |  |
| --- | --- |
| **Feature** | **Value** |
| Total Samples | 10,000 |
| Positive Cases | 3,500 |
| Negative Cases | 6,500 |

**Referring in text:**

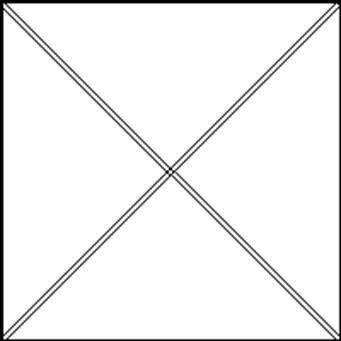
As shown in Table 3.1, the dataset contains a total of 10,000 samples...

**3. Figures**

**Formatting:**

* Figure number and caption should be placed **below the figure**.
* Captions should be **concise and informative**.
* Figures must be of **high quality and resolution**.
* Use consistent color schemes and labeling.

**Example:**

****

**Figure 4.2** **Accuracy Comparison Across Models**

**Referring in text:**

Figure 4.2 illustrates the comparative performance of the three models in terms of accuracy.

**4. Placement and Referencing**

* Do not place a table or figure without discussing it in the text.
* Avoid placing tables or figures at the top or bottom of a page alone. Integrate them with surrounding text where possible.
* Every table/figure must be **listed in the List of Tables/Figures** section in the front matter of the thesis.