**Machine Solver for Textual Represented Rudimentary Physics Problem**

A Thesis

Presented to the Faculty of the

College of Computer and Information Sciences

Polytechnic University of the Philippines

In Partial Fulfilment

of the Requirements for the Degree

Bachelor of Science in Computer Science

Besabe, Lester Y.

Camero, Jan Andrew S.

August 2016

**CHAPTER 1**

**THE PROBLEM AND ITS BACKGROUND**

This chapter discuss the introduction, background of the study, theoretical framework, conceptual framework, statement of the problem, scope and limitation, significance of the study, and definition of terms. Goals and objectives of the study are stated in this chapter.

* 1. **INTRODUCTION**

Computational word problems have always been a part of the learning exercises of an individual. It is noticeable that this type of problems opens a wide variety of real-world solutions. The idea of having word problem solving as a challenging task is not because of the person’s mathematical skills, in fact, many studies have shown that it is really reading comprehension that makes it difficult.

A successful evaluation of a word problem requires two general things; first, is to translate the word problem into a mathematical equation with its parameters, and second, to solve the equation using an appropriate solution based on what is required in the given problem.

Imagine if a computer can successfully perform these things. Having a computer to automatically translate a textual representation of a computational problem into a mathematical notation, and have that equation to be automatically evaluated and solved. By the time a computer knows how to understand and interpret this kind of problems, then it will be a step higher for the computers to solve general problems.

The paper is designed to create a way for computers to automatically evaluate, interpret, and solve a computational word problem, specifically in the domain of Physics, for the reason that this particular domain reflects real-world scenarios. It aims to extract important parameters in the word problem such as the given and the required. As well as to analyze the semantics of the text for the formulation of the appropriate solution to be applied. The system will be designed to perform different disciplines of Natural Language Processing for syntax and semantics analysis. Additionally, **[insert appropriate algorithm]** will be used for the identification and extraction of the relevant parameters.

* 1. **CONCEPTUAL FRAMEWORK**

Start the conceptual framework here

* 1. **STATEMENT OF THE PROBLEM**

The study aims to translate a Physics word problem into its corresponding numerical representation. As well as to evaluate and solve the given problem using the different disciplines of Natural Language Processing. Specifically, this study sought to answer the following questions.

1. What is the accuracy of the system in recognizing named-entities based on the following criteria?
   1. Precision
   2. Recall
   3. Error Rate
2. What is the accuracy of the system in solving and evaluating the given Physics word problem? In terms of the following:
   1. Given
   2. Required
   3. Formula
   4. Solutioin
   5. Final Answer
   6. **SCOPE AND LIMITATIONS**

Start the Scope and Limitations here

* 1. **SIGINIFICANCE OF THE STUDY**

Start the significance of the study here

* 1. **DEFINITION OF TERMS**

Start the Definition of terms here