**CHAPTER 1**

**INTRODUCTION**

**RATIONALE OF THE STUDY**

Classifying is a process of assigning something or someone into different classes or categories based on shared quality or characteristics. Humans have done this process even before the invention of modern computers, Medieval army commanders sorting their formation based on the roles of the unit, pikes up-front, archers at the back, or a renaissance doctor categorizing medicines on a shelf and labeling them. The goal is simple: to easily manage and analyze the information at hand. A simple task no doubt, but doing it manually, with a large amount of information, let’s say documents, well that’s where the fun stops. Managing documents manually, or in this study’s case, research projects, is not ideal, especially if we’re manually categorizing hundreds of researches from the repository. To improve this process, we enlist the help of machines in the form of Artificial Intelligence (AI).

The advancement of modern computing gave birth to AI and eventually its underlying fields, Machine Learning (ML) and Natural Language Processing (NLP). AI technology has been around since the 1940s [[1](https://www.javatpoint.com/history-of-artificial-intelligence)]. It’s been fine-tuned throughout the past decades. There are a lot of real-world applications that use ML and NLP.  For instance: chatbots, language translators, email classification and filtering. With the help of AI and its related fields, document classification can now be done automatically [[2](https://www.altexsoft.com/blog/document-classification/)]. Most of the studies focus mainly on classifying research/capstone projects into different high-level topics, for instance: Computer Vision, NLP, AI, Internet of Things (IoT), Blockchain and so much more, which brings this study to lean more on adding features that will help not just the research centers but also the student researchers and advisers themselves. There is a lack of a readily-available application in the school right now that manages all previous research/capstone projects.

This study aims to develop a system in which the research center, thesis/capstone advisers, and student researchers can benefit by creating a mobile application that can categorize research into different high-level categories/topics, this can be done in two ways: text classification, and visual classification. The former is done by inputting the soft copy of the abstract into the app. The latter on the other hand scans the hard copy of the abstract and extracts its text through the use of Optical Character Recognition. Another feature is that it can give similar research/capstone as a recommendation. With all these features, students can kick-start their research proposals more easily and at the research center, they can identify easily and automatically categorize research to its actual classification.