

**CLOUD-BASED THESIS AND CAPSTONE ARCHIVING SYSTEM WITH AI
CHATBOT IN THE PHILIPPINE COLLEGE OF TECHNOLOGY**



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Members:

Khyle Bulawan

Carlwyn Bajala

Jake Pinggol

Henan Oliveros

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Abstract

The **Cloud-Based Thesis and Capstone Archiving System with AI Chatbot in the Philippine College of Technology** was developed to address the limitations of traditional, physical archiving methods used for storing student research outputs. In the existing setup, access to theses and capstone projects is often limited to printed copies stored in shelves or logbooks, making it difficult for students, faculty, and researchers to conveniently retrieve or explore academic works.

This study presents a modernized, digital solution through a cloud-based platform that allows for the centralized uploading, storage, and retrieval of thesis and capstone documents. The system enables administrators to upload research projects in PDF format along with important metadata such as title, author, year, course, and keywords. End-users can easily browse or search through the digital repository using multiple filters and keyword-based queries.

A key innovation of the system is the integration of an **AI-powered chatbot**, which acts as a virtual assistant that guides users through the platform. The chatbot can respond to queries about research topics, help users locate documents, explain how to use system features, and provide general support simulating the experience of speaking to a human librarian or research assistant.

With this intelligent and accessible platform, the system promotes the digitization and long-term preservation of academic works while significantly improving the user experience. This innovation not only enhances information accessibility within the Philippine College of Technology, but also sets a precedent for more interactive, AI-assisted digital libraries in educational institutions.

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Chapter I

INTRODUCTION

Background of the Study

At the Philippine College of Technology, students are required to submit thesis and capstone projects before graduation. These academic works are valuable — not just as proof of a student's hard work, but also as helpful references for future researchers. However, the current method of storing these papers is outdated. Most of the research is kept in printed form, filed in cabinets or stacked on library shelves. While this system has been in place for years, it is no longer practical in today's digital age.

As time passes and more students graduate, the collection of printed research grows bigger and harder to manage. Looking for a specific project can take hours of manually searching through folders or logbooks. Physical copies are also at risk of damage, fading, or even getting lost. On top of that, these materials are only accessible during school hours, and only to those who are physically present on campus. This makes it difficult for students or faculty who need information urgently, or who are working remotely.

To solve these issues, this study proposes the development of a **cloud-based thesis and capstone archiving system**. The goal is to digitize research works and store them securely online, so that users can search, access, and download them anytime and anywhere. The system will also include an **AI-powered chatbot** that acts as a virtual assistant, guiding users on how to find what they need, even if they're not familiar with the platform. This will make the system more user-friendly, especially for those who are not very tech-savvy.

Through this project, the school community will benefit from easier access to academic research, better preservation of student work, and a smarter way of managing

information. Instead of spending hours searching through printed files, users can find what they need in just a few clicks — whether they're in the library, at home, or on the go.

Statement of the Problem

In many schools, including the Philippine College of Technology, thesis and capstone projects are still stored in printed format—kept in logbooks, folders, or library shelves. While this method has worked for years, it is now becoming outdated and inconvenient. Students and teachers face difficulties when they need to find a specific research work because they have to search manually, which can take a lot of time.

There's also the risk of damage or loss. Paper copies can fade, tear, or get misplaced. Once that happens, valuable knowledge from past students can be lost forever. More importantly, access to these research works is limited to people who are physically present in the school and only during certain hours. This is not ideal, especially now that students often need to do research from home or during flexible hours.

Because of these issues, the main problem that this study wants to solve is:

How can we provide a more modern, faster, and more accessible way to store, organize, and retrieve thesis and capstone projects at the Philippine College of Technology?

To better understand this main issue, we also ask the following specific questions:

Specific Problems:

1. How can we safely store student research projects in a digital and organized way?

2. How can students and teachers find research projects quickly and easily without going through physical records?
3. How can we make sure the system is user-friendly for those who are not tech-savvy?
4. How can the system ensure that the research archive is accessible anytime and from anywhere?

By addressing these problems, the project offers concrete solutions: storing research files in a secure cloud-based system prevents damage and loss; adding a smart search function makes it faster to find specific works; integrating an AI chatbot guides users through the platform easily; and allowing downloadable PDFs ensures that faculty can still print research copies without wasting time searching manually. Altogether, this system solves real challenges in the current setup and provides a smarter, more accessible way to manage academic research at the Philippine College of Technology.

Objectives of the Study

This study was made to fix a problem that many students and teachers face at the Philippine College of Technology. Right now, thesis and capstone projects are kept in printed form stored in cabinets, shelves, or recorded in logbooks. Over time, this old-fashioned way of keeping records has become difficult to manage. If someone needs to find a specific project, they have to look through piles of papers, which can take a lot of time. There's also the risk that these physical copies might get lost, torn, or damaged, especially as the years go by. It's even harder when someone needs access after school hours or from outside the campus it simply isn't possible.

To solve these problems, this study aims to build a digital system where research works can be stored online using cloud technology. This way, students and teachers

can easily access any thesis or capstone project anytime they need it, whether they're at home, in school, or even on their phone. The goal is to make research access easier, faster, and more reliable giving the school a modern, convenient solution that saves time and keeps valuable student work safe for years to come.

Scope and Limitations

For the purpose of managing ICT resources and lab scheduling in schools, this work focuses on creating an automated system for borrowing and reservations. In addition to letting students schedule lab time, it will keep track of borrowed equipment like as keyboards, mouse, LAN testers, and crimping tools. Through scheduling tools and automated reminders, the system seeks to increase attendance, decrease equipment loss, and promote accountability.

Nevertheless, the system has drawbacks. It is intended for a single school and solely concentrates on ICT-related supplies, leaving out other materials like sports equipment or literature (books, etc.). Because students are required to return the tools and show up for lab sessions on time, its efficacy hinges on user compliance. Moreover, real-time tracking requires network connectivity, and performance may be impacted by technical difficulties. The approach offers an organized way to enhance ICT resource management in spite of these drawbacks.

Significance of the Study

This study is essential for improving school scheduling and ICT tool management. An automated system for reservations and borrowing has been implemented, which guarantees improved tracking and prompt return of borrowed equipment, hence lowering shortages and misplaced goods. Teachers and administrators will be able to effectively control inventory and usage, and students will always have access to the tools they need.

By automatically reminding students to attend their planned lab sessions, the technology also helps with lab scheduling and attendance. This facilitates better resource management, lessens scheduling conflicts, and boosts the effective utilization of ICT labs. As a result, schools may better utilize their facilities and students can take advantage of all available learning possibilities.

Additionally, the study promotes students' responsibility and accountability when using borrowed ICT resources. It encourages prudent use of school resources by putting in place explicit tracking and return mechanisms. In conclusion, this project offers a workable, structured way to maximize lab scheduling and ICT resource management, which is advantageous to administrators, instructors, and students.

Chapter II