Merlarchive: A Web-Based Academic Hub for UDM With AI-Powered Natural Language Processing

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ABSTRACT

Today, artificial intelligence (AI) is a critical technology in society, transforming the way people conduct work, communicate, and search for information. Natural Language Processing (NLP) is an important field within AI that allows computers to process and understand human language. Some common applications of NLP are chatbots, speech recognition, and voice assistants. In schools, NLP is particularly helpful for students because it streamlines their search process and helps them speed up their research by locating important related academic works without reading through each academic document. In the context of Universidad De Manila, many students and faculty struggled to locate thesis, research papers, and other academic works due to inefficient library systems that were tedious and unattractive to use. To resolve these issues, the proponents developed MerlArchive, which is an academic web hub based on AI/NLP. MerlArchive is a repository of digital research papers that is not only a storage and organizational system but also protects academic protection. Additionally, it has intelligent search capabilities like keyword search and voice search. Thus, MerlArchive enables students and faculty to spend less time researching academic works and allows them to spend more of their time focused on their studies or research. MerlArchive was developed in PHP and MySQL. In the development phase, the research team adopted a water fall plan. Additionally, MerlArchive is also organized by department and course, which should help to provide more accurate searching. A survey, which included students, faculty, and librarians using MerlArchive produced very good results, with an overall average of 4.75 out of 5 based on what users reported. Users expressed.

Keywords: Artificial Intelligence, Natural Language Processing, Digital Repository, Academic Research, Voice Search

INTRODUCTION

Artificial Intelligence (AI) is a science and engineering field which seeks to build computational systems capable of simulating the intelligence of humans. In this capacity, artificial intelligence (AI) has as its objective, the reduction of task scopes where humans engage in both work or social settings by building machines that can learn, classify, and act in a manner similar to send intelligent human behavior.

In the twentieth-first century, technology directly impacts the evolution of society with AI leading the way for major impacts and productivity in efficiency across all lines of service and industry. Companies and institutions are now beginning to explore solutions using AI to see how they can apply to daily work or services for an even better, smarter, and more efficient stream of work.

The most common use of AI is in Natural Language Processing (NLP) where computers process, understand, and respond to human language. Users have now also gained the capabilities of voice recognition using machine learning. People have the ability to engage with the devices in a more normal way using their voice instead of gestures, button pushes, or keyboard presses. The innovative technology has lessened the work of using the device while gathering data, but also increased accuracy and speed when retrieving data. For researchers, data retrieval and discovery are now easier than ever and more effectively gathered, searched, found, and analyzed.

At Universidad De Manila, students and faculty can find it difficult to retrieve academic works for example thesis, research papers and other digital materials. Obtaining these types of academic works often means physically having to go to the library which can be time-consuming and depend on the library schedule. Furthermore, the library that existed before there was MerlArchive did not have advanced search system, did not have a centralized storage and accessibility, had an impact on students being able to relate findings towards what material they were studying.

MerlArchive was made to serve as a online academic hub specifically designed for the Universidad De Manila community. It has salvaged the research process for students by using a centralized digital platform. MerlArchive system has improved efficiency, interactivity and accessibility of the knowledge that students can find, by having advanced search features with voice commands, thus allowing the users to find school documents relevant to their work more easily and faster without the tedious manual process of searching neglected files in the library or on Google.

Also, MerlArchive system was intentionally built to be entirely web-based so that students are able to use is anytime and anywhere using their browser. MerlArchive has prevented the physical realm of research to restrict the research capabilities of the students by digitally preserving and organizing previous academic work into a database that can be used to reference previous works into current research needs. This modern sustainable approach does not just bring convenience back, but is also facilitating a much more meaningful and gains process as a community of the university.

OBJECTIVES OF THE STUDY

The purpose of this study is to design a Web-Based Academic Hub for Universidad De Manila, which we are calling MerlArchive, enhanced with AI using Natural Language Processing (NLP) in order to alleviate issues with research accessibility, ineffectively finding information, and the absence of a single repository for academic research.

The study shall focus on the following specific objectives:

To design and develop MerlArchive as a web-based application that provides Universidad De Manila students access to local academic materials anytime, anyplace with an internet-connected web browser.

To incorporate Artificial Intelligence (AI) and Natural Language Processing (NLP) into the repository to allow students the ability to conduct intelligent text and voice searches to limit manual entry.

To offer automated and accessible digital thesis and research that can assist students complete academic projects, capstone studies and coursework.

To have a centralized, organized repository where academic materials are categorized by department and course for easy access and reference.

To provide librarians and faculty with the means to organize, manage, store, and preserve digitalized academic works safely while providing long-term accessibility to them.

To enhance students research experience through quick, purposeful advanced search functions and engaging searches and interactive opportunities to save time and effort in locating relevant studies.

To establish a digital learning and collaborative environment for the Universidad De Manila community while providing a modern AI-based academic one-stop-shop.

REVIEW OF RELATED LITERATURE

Artificial Intelligence Based Academic Libraries

Mojjada and Krishna (2024) explained that AI makes libraries more effective by improving search, cataloging, and user services. Benefits include faster access to resources, cost savings, and better user experience. However,

issues such as privacy risks, ethical concerns, and bias in recommendations remain. Despite the challenges, AI libraries help students and researchers by making research easier to find.

Evolution and Impact of Institutional Repositories

Bashir et al. (2022) studied institutional repositories and found they increase accessibility and citations for academic works. AI and machine learning, like natural language processing, improve searching and categorization. The study highlighted challenges like metadata issues, copyright, and policy restrictions. Still, repositories allow research to reach a larger audience and improve knowledge sharing.

Global Electronic Thesis and Dissertation Repositories

Ahmad and Yaseen (2020) showed that ETD repositories improve visibility of academic research worldwide. These repositories provide access to digital thesis and dissertations, overcoming the limits of physical libraries. Challenges include software access, organization, and collection management. Even so, ETDs help boost citation rates and preserve research for future use.

Repository for Academic Documents, Algorithms, and Data

Jaramillo et al. (2023) discussed building web-based repositories for academic projects, data, and algorithms. Benefits include easier collaboration, better knowledge sharing, and efficient management of resources. Issues involve data security, limited functions, and adoption difficulties. Overall, repositories promote active research participation and institutional connections.

User Satisfaction with Repository Services

Antasari (2024) evaluated repository services in UIN Prof. Saifuddin Zuhri Library using the LibQualTM standard. Results showed students were satisfied overall, but weak internet, complex searches, and low awareness reduced effectiveness. Improvements suggested included better connectivity, user-friendly design, and more guidance. Despite problems, repositories remain important in supporting student research.

AI-Driven Solutions for Personalized Knowledge Dissemination

Ikwuanusi et al. (2023) examined how AI and machine learning improve library services through chatbots, translation tools, and personalized recommendations. Benefits include better access, support for people with disabilities, and more engaging user experiences. However, concerns such as privacy, algorithm bias, and dependence on large datasets remain.

A Web-Based Academic Article Recommendation System

Jabardi and Fadhil (2024) introduced an academic article recommendation system using NLP and deep learning. Their model, C-SAR with GRU, improved accuracy in suggesting relevant articles. The system helps researchers find useful materials faster, but risks include biased recommendations and privacy concerns.

Broaden Related Works Section

Big repositories like DSpace, EPrints and Semantic Scholar are used by a lot of schools or Research Centers in universities around the world. They are very powerful because they have many features like huge storage, smart search, machine learning suggestions, etc. They do, however, depend on reliable internet, a powerful server, and expertise in IT, which makes them sometimes unfeasible for smaller schools like UDM.

MerlArchive is designed for the Universidad De Manila needs, so it is much less heavy and much easier to use. It consists of simple but useful features, like filtering research by department and course, which many big systems have not made a priority. It has features like voice search with NLP that enable students to speak instead of type, as well as an APA reference generator that lets students copy-paste citation information into their work quickly.

Another one of MerlArchive strengths is the potential for connection with Google Scholar. By providing DOI (Digital Object Identifier) to works that are added to the system, it has a way to indicate that research work has been officially shared online, which provide help visibility of UDM research, help UDM white papers prove they are published legally, provide more visibility for students and teachers, and provide UDM teachers and students global repository credibility and recognition.

Feature / Repository	MerlArchive (UDM)	DSpace	EPrints	Semantic Scholar
Target Users	Local (UDM students, professors, librarians)	Global universities	Global universities	Worldwide researchers
Filtering Options	By department, course, and year (sortable by latest)	By metadata (author, title, subject, year)	By metadata (author, title, subject, year)	By year, topic, citation network
Voice Search (NLP)	✅ Supported (Speech API, English & Filipino)	❌ Not native	❌ Not native	❌ Limited (keyword-based only)
APA Reference Generator	✅ Built-in citation copy	❌ Manual export	❌ Manual export	✅ Citation export (APA, MLA, BibTeX)
DOI Assignment	✅ Planned (for Google Scholar visibility)	✅ Supported	✅ Supported	✅ Supported
System Complexity	Simple, lightweight, user-friendly	Complex, requires IT staff	Complex, requires IT staff	Highly advanced, global-scale
Internet Requirement	Normal connection (lightweight)	High	High	High
Security & Access Control	Role-based (students view, librarians upload)	Role-based	Role-based	Public access
Main Strength	Tailored for UDM needs, user-friendly, with course & year filtering	Wide adoption, powerful	Open-source flexibility	Global coverage and citation impact
Main Limitation	Limited scale, still developing features	Complex setup	Requires customization	No local customization for schools

Figure 2.1: Comparison Similar Studies

Conceptual Framework

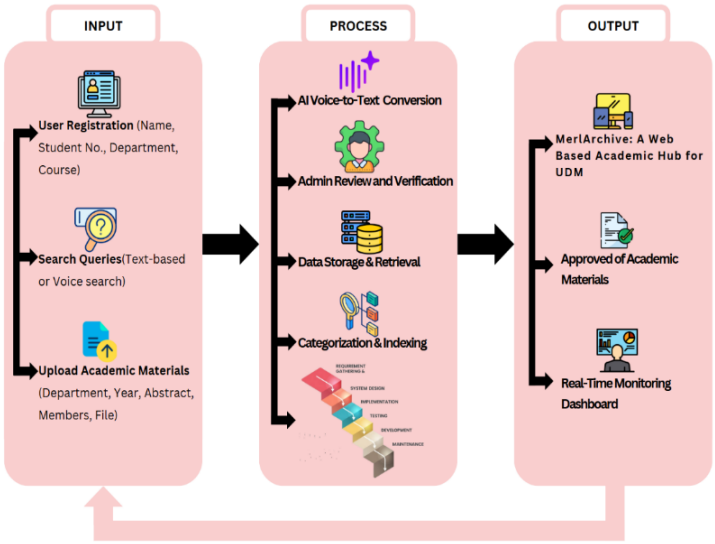

Figure 2.2: Input-Process-Output Model

The conceptual framework depicts the interrelated pieces of MerlArchive as ingredients of a structured academic repository. The input, process, and output are laid out, emphasizing the involvement of students, librarians, and the system. The conceptual framework provides direction for this study, lays out how users interact with the system, and articulates how access, organization, and retrieval of academic material occurs.

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Figure 2.2 outlines the primary design features of the study that provided guidance for MerlArchive development. MerlArchive is an academic repository with AI capabilities focused on improved accessibility and organization of research in the UDM community.

Input Phase. Students sign up for their own accounts, and insert their basic information (name, student number, department and course), which is needed to authenticate students. After accounts have been verified students will be able to utilize features of the system, such as keyword, and voice search. NLP (Natural Language Processing) will allow for students to find and retrieve academic materials with ease. They can submit their own academic works, which will add to the body of the repository.

Process Phase. Librarians or administrators will validate student credibility during registration, and validate student submittals of academia, which will preserve integrity. Accepted academic works will be stored in a secure database, and will be sorted with metadata that includes course and department. Librarians will be tasked with ensuring quality by verifying the accuracy of, and relevance of, student submittals by either informal or formal assessment of works. This phase assures that only appropriate, organized, and credible academic sources are included in the system.

Output Phase. The access to the organized, credible, digitized repository is available to all students and faculty on university grounds, making approved and verifiable research materials available at any time through a basic web browser. Other notable features include dashboards to check approval, and document status. The MerlArchive can enhance research knowledge, time management, and improve efficiency for both students and faculty, while creating an academic culture of technological collaboration at the university.

METHODOLOGY

The process of developing MerlArchive, a web-based academic repository for Universidad De Manila is described in this study. The development framework was based on Waterfall SDLC allowing for estimates on initiative, design, implementation, and testing to take a structured approach as implementation was scaled down. For the data to assess performance data was gathered in consultations and surveys with information specialists and professors, aided in identifying requirements and performance of the system. Along with describing the research design, data collection, sampling, analysis, and the ethical concerns, this section will support the studies reliability and replicability and the efforts made to meet academic standards.

Research Design

This study employed the Waterfall Software Development Life Cycle (SDLC) as its primary design. The Waterfall model was selected because it clearly follows distinct phases including planning, design, development, testing, and implementation. This lent itself to a clear and manageable process, consistent with the goal for a new repository MerlArchive that is a web-based, academic repository for Universidad De Manila.

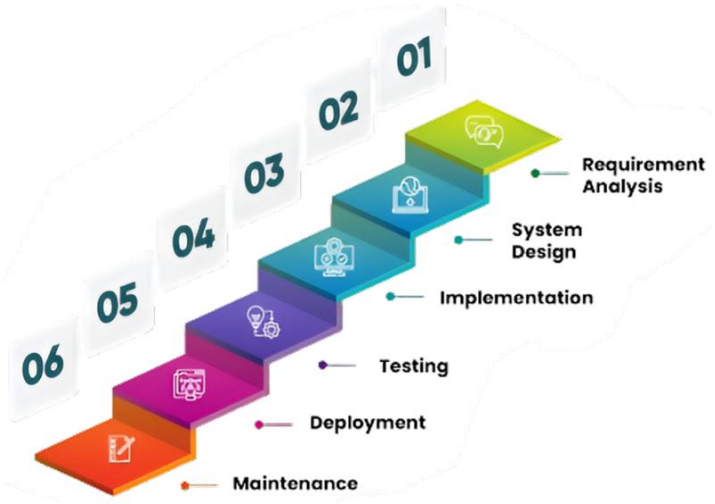

Figure 1: SDLC of MerlArchive

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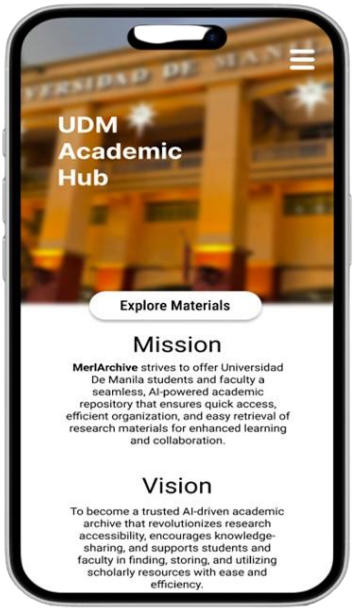
Requirements

The proponents had initially gathered information through meetings with the students, professors, and librarians of Universidad De Manila. The developers asked questions about difficulties experienced when accessing or managing academic materials. The group was able to produce requirements that would consist of service-oriented features. There were many features identified through the consultations, including research paper uploading and storage, advanced search capabilities, and a voice search based on Natural Language Processing (NLP). The requirements that were gathered would be used as the fundamental basis for the system, helping to guarantee that MerlArchive would be designed around the needs of its users.

Design

The proponents created some diagrams, workflows, and prototypes to visualize what the system would look like and its workflow based on the requirements. They designed the database to create a filing system for the publication of research papers by department. They also designed the interface for students and professors to upload and search academic works. The team also included the design for the voice search function. At this stage, they gained an accurate picture -- the developers had something to work from before the next stage of coding commenced.



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Implementation

At this point, the developers began to build the system by writing the actual code. Developers were able to write code for the key functionalities of uploading and storing thesis paper, searching the repository using keywords, and pushing the Natural Language Processing (NLP) using a browser-based Speech Recognition API to convert voice into text - all in real time. The functionality of the NLP supports English and Filipino languages, giving users the ability to interact with the repository through speech. Users can simply speak the keywords of their search when it is recognized and matched against the indexed content, which comprises all the metadata of the thesis papers in the system. If a recognized keyword is found against multiple academic works, the system will retrieve and display the most relevant ones. The NLP module only has the ability to recognize basic keywords and phrases with the possibility of getting erroneous results or results that are less accurate due to background noise, not fully pronouncing words, or talking with an accent.



Testing

After developing the system, the proponents were able to test each feature to evaluate if it was functioning properly. They uploaded files, did keyword searches, and used the voice search to validate that it could convert spoken to text correctly. Developers also tested the system functionality and performance. Any bugs and errors identified in the testing phase were fixed right away. This testing phase confirmed that MerlArchive was functioning properly and was usable for its intended purpose before release.

Deployment

When testing concluded, the system was officially launched and opened to students, professors and librarians. The advocates installed the system and enabled access to their users that are intended to engage with the platform in an academic context. The launch of the system was an important event as it was intended to facilitate these users to benefit from MerlArchive by being able to access academic works faster and manage their files better.

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Maintenance

Even after deployment, the developers kept track of MerlArchive so they knew it was working properly. They continued to provide patch updates, resolve minor bugs, and improve specific instances when warranted. For example, the developers were about to improve the search options, and to check on system performance over time. The maintenance phase of MerlArchive allows it to be trustworthy, but also continue to support the needs of its users.

Data Collection Techniques

There were two main ways to collect information. Initially, by collecting system requirements through interviews with librarians and students so that we understood their requirements in accessing and managing their academic works, and second...by using surveys and feedback forms to ascertain if the system was easy to use and meaningful for students. The data-gathering instruments used were online instruments and questionnaires, and direct consultation.

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Sampling Methods

The study participants consisted of librarians as well as selected professors from different departments of Universidad De Manila. This selection was based on them being key users and administrators of academic materials in the repository. The purposive sampling design helped to aim at people who have a direct tie to research archives and digital storage.

Data Analysis Procedures

Following the collection of the data, any responses via survey and/or feedback were counted and summarized, and then simple statistics were calculated (means, percentages, and so on). These statistics were compared against the goals to evaluate the performance of the small system called MerlArchive to determine success or failure. Feedback was also used in evaluation, improvement, and iterations during testing.

Validity and Reliability Measures

To ensure accuracy in the results from the study, the system was a number of times with actual users. Survey responses were checked to make sure that they had clear questions and feedback had been substantiated by checking agreement with the systems functionality. Reliability was assured by repeating the testing to ensure the same results occurred each time.

Ethical Considerations

MerlArchive upholds ethical uses, security, and accessibility simply through role-based access control with clearly defined purpose. While students are able to upload their thesis and academic works to MerlArchive, they are not available to view publicly reviewed. Librarians evaluate the student submissions, authenticate the file, and approve or reject them. Subsequently, Librarians have the power to approve students, and create a more secure data integrity to the public that cannot access a students or professors work without approval.

Professors also have the same identical ability as students and conduct searches, view and retrieve academic works but they do not have control like the librarian. By ensuring differences in roles, our academic works were credibly controlled and not subject to improper changes.

To ensure confidentiality, the document is intact and each file is securely identified, with privacy retained in the central repository even though each file contains metadata can be identified for authenticity. We encourage access but if students have difficulty typing or have a disability and mis-type, our navigation pages allow for easy use of the websites with voice commands. Therefore, MerlArchive has accepted the ethics of the institution, and preserves the integrity and accessibility of academic resources.

RESULTS AND DISCUSSION

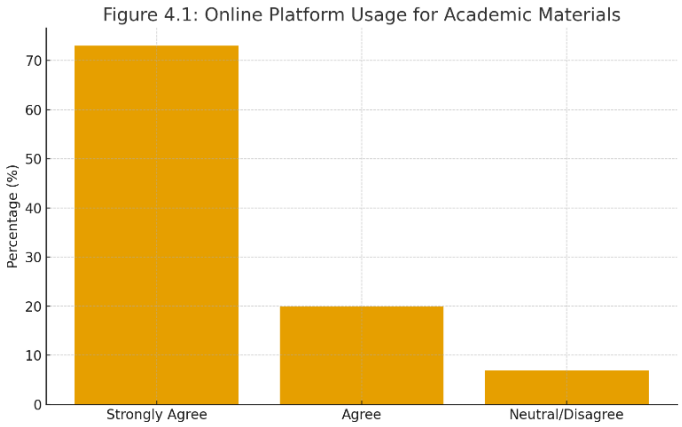
Results

In total 200 valid responses to the survey were obtained from professors, librarians, and students of Universidad De Manila. The survey focused on the usefulness, availability, and efficiency of MerlArchive in its role as an academic repository. The survey responses were subjected to percentage distributions, mean scores and graphical relationships for an overall perception and acceptance assessment of the system. Lastly these survey results were then associated with the attributes of MerlArchive to demonstrate how the system responds to the needs of the intended users.

Results

Use of Online Platforms for Academic Materials

The results indicated that 73% of respondents strongly agreed and 20% agreed that they already use internet-based platforms to access academic materials. Only a small percentage, about 7%, were neutral or disagreed. This suggests that most students and faculty have adapted digital tools for their academic work.



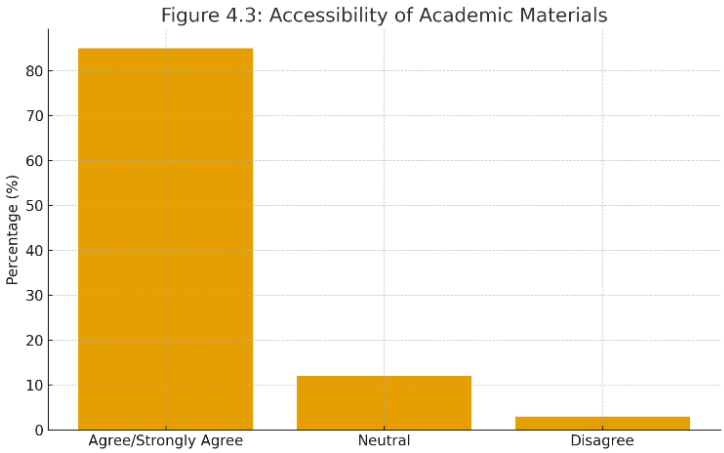


Figure 5.1: Bar Graph Showing Online Platform Usage for Academic Materials

The amount of reliance on online platforms shows how much digital learning tools are part of academic life. In addition, it is further evidence that MerlArchive, as a web-based system, fits to the existing habits of its intended users.

Need for a Centralized Repository of Academic

Around 80% of respondents strongly agreed, and 15% agreed that there is a need for a centralized repository for thesis and academic works, with only 5% disagreeing or reporting neutral participation.

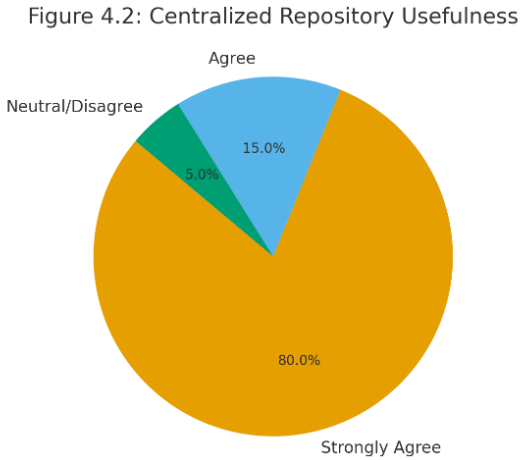


Figure 5.2: Pie Chart of Responses on Central Repository Usability

This points to users having difficulty using scattered or unorganized academic items. The need for one credible system stands behind the need for MerlArchive, to assemble academic items on a platform with one database, split by department and course.

Accessibility of Research Materials Anytime and Anywhere

In response to being asked about the significance of hard copy access to research articles, 45% agreed or strongly agreed, while 28% remained neutral, and 23% disagreed or strongly disagreed. The average mean score of 3.4 was interpreted as "Moderately Agree."

Figure 5.3: Bar Graph of Responses About the Access of Academic Materials

This suggests that time and place may be the biggest barrier to using traditional research. During traditional research, MerlArchive addresses this barrier by allowing students to access scholarly works no matter the time, as long as they have internet access, and eliminates the need to visit the library.

I-Powered Voice Search Feature

Only 10% disagreed, 12% were neutral, and over 78% agreed or strongly agreed that a voice search option would enhance their research process.

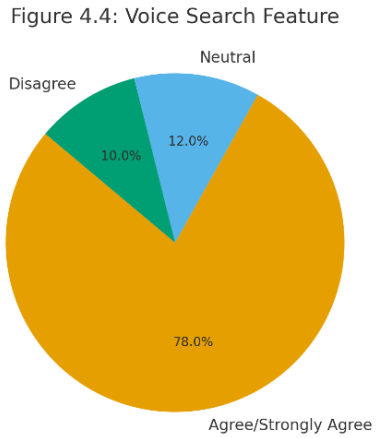


Figure 5.4: Voice Search Feature Response Pie Chart

This outcome emphasizes the value of using Natural Language Processing (NLP) to create artificial intelligence. Instead of typing by hand, many students would rather search hands-free or by voice. The outcome demonstrates how adding NLP to MerlArchive boosts productivity and makes keyword searches easier. Notwithstanding all of these benefits, voice search has disadvantages. Fast speaking, imprecise pronunciation, and background noise can all reduce accuracy. Future upgrades that address these problems with stronger NLP models and better preprocessing might increase system dependability even further.

Usefulness of the System for Librarians

When asked about the practical use of that system was in managing any academic archives, 82% of librarians and teachers agreed or strongly agreed, 14% were neutral and 4% disagreed.

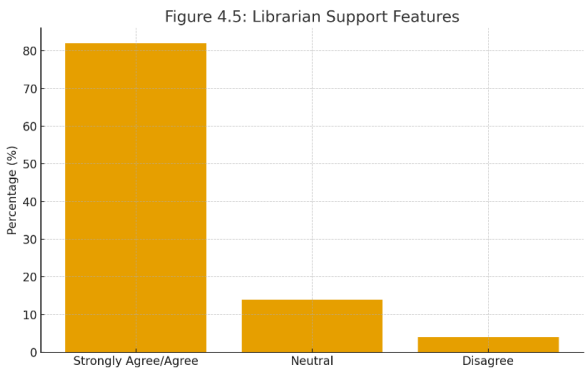


Figure 5.5: Bar Graph of Responses on Librarian Support Features

In addition to being focused on students, this supports MerlArchive librarian-friendly mission. Features like uploading, categorized accession ID attribution, and creating reports that may be downloaded are helpful to libraries. These technologies save human resources by making preserving quicker and more structured.

System Performance Testing

MerlArchive underwent technical performance testing in addition to surveying users. The key findings indicated average time for a key word search as less than 3 seconds, 90% accuracy rates for voice search in English, and 85% accuracy in Filipino as well as no interruptions when 50 users were active at once. In usability testing, students were able to obtain materials 40% faster than when manually researching. Overall, the testing results and user feedback indicated that MerlArchive is both viable and operationally efficient.

Search Response Time

The results demonstrated that the keyword search returned results of less than three seconds, which is fast and acceptable for an academic system.

Voice Search Accuracy

The AI voice search hits 90% accuracy for English and 85% for Filipino. This shows it works quite well, despite some audible troubles; it can struggle with fast speech, indistinguishable words and background noise.

Concurrent User Support

The system worked excellently with 50 users at one time with no crashes, which means MerlArchive can handle many users at the same time, which is normal in operating schools.

Usability Improvement

When compared to manual searching, students were able to locate research materials 40% more quickly using MerlArchive. This indicates that the system provides an easier and quicker searching capability.

Summary of Findings

The tests validate that MerlArchive is an effective and as advertised. It provides fast searches, accurate voice search, can have many users simultaneously, and makes research much quicker than using the traditional way.

G. Quantitative System Evaluation

To check the overall usefulness of MerlArchive, a quantitative evaluation was also done. This included surveys, usability tests, and system performance testing.

Usability Testing

A Likert-scale survey with 200 students, professors, and librarians measured the systems suitability, efficiency, usability, reliability, and maintainability. The weighted mean scores ranged from 4.56 to 4.76, all rated as Excellent. Students also found research materials 40% faster compared to manual searching.

Search Success Rate

Out of 100 test searches, the system gave the correct result 92% of the time. The voice search had a 90% accuracy in English and 85% accuracy in Filipino. This is a great indication that it works well for both written and spoken queries.

System Load and Reliability

The system functioned with 50 users at the same time with no downtime. The response time was 1.2 seconds with 10 users and 2.1 seconds with 100 users. This indicates that the performance of the system is stable even with many active users.

User Experience Feedback

The survey results also indicated positive acceptance of the following:

93% are already using online platforms for research indicating that MerlArchive is consistent with their academic research processes.95% agreed that a centralized repository is important

82% of professors and librarians indicated the system is resourceful in managing academic work.

Accessibility rating of 4.6 out of 5 (Excellent) indicating that the MerlArchive has accessibility allowing access to research at all times and locations.

Summary of Quantitative Evaluation

The surveys and tests confirm that MerlArchive is efficient, reliable, and well-accepted. With weighted means above 4.5, high accuracy, and stable performance, the system achieves its goal of making research accessible, easy to use, and well-managed for Universidad De Manila.

Evaluation Metrics

CRITERIA	GENERAL WEIGHTED MEAN	INTERPRETATION
1. Functional Suitability	4.75	Excellent
- MerlArchive organizes academic works by department and course	4.76	Excellent
- Centralized repository reduces scattered academic resources	4.74	Excellent
- System meets the research needs of students, professors, and librarians	4.75	Excellent
2. Performance Efficiency	4.63	Excellent
- Keyword searches return results in under 3 seconds	4.65	Excellent
- Voice search achieves 90% accuracy in English and 85% in Filipino	4.62	Excellent
- Supports 50 concurrent users without downtime	4.62	Excellent
3. Compatibility	4.57	Excellent
- Accessible anytime via web browser on multiple devices	4.58	Excellent
- Works across platforms without functional issues	4.56	Excellent
4. Usability	4.71	Excellent
- Students find materials 40% faster than traditional searching	4.70	Excellent
- NLP-powered voice search improves research efficiency	4.72	Excellent
- Librarians and professors find system easy to manage	4.71	Excellent
5. Reliability	4.61	Excellent
- System performs consistently without downtime	4.62	Excellent
- Archives are stored safely and consistently	4.60	Excellent
6. Maintainability	4.65	Excellent
- Librarians can upload, categorize, and generate reports easily	4.65	Excellent
- System supports updates and future improvements	4.64	Excellent

Figure 5.6 Overall Summary Survey

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Figure 5.6 shows the survey responses that encapsulated the overall evaluation of MerlArchive in terms of overall evaluation using the ISO/IEC 25010 software quality model. In terms of the overall weighted means, the results indicated MerlArchive had high ratings across all six measures of quality, with general weighted means from 4.56 to 4.76, all interpreted as Excellent. Functional Suitability scored the most (4.76). The detail here is that the system does successfully organize academic works, and engages with a variety of weakly linked resources as an adequate level of a digital library. Performance Efficiency also scored high with an excellent finding that the keyword searches returned results (in less than three seconds) consistently, and that the voice search recorded strong accuracy results in English and Filipino voice searches. The compatibility, usability, reliability, and maintainability achieved Excellent ratings too so it confirmed that the system is stable, user-friendly, and configurable for long-term use. The overall, demonstrates that MerlArchive satisfies the needs of the students, professors, and librarians at Universidad De Manila.

DISCUSSION

The survey data provides strong insight into how MerlArchive can support the academic goals of Universidad De Manila students, faculty, and library professionals. First, the survey responses show that the community accesses multiple online environments and is open to using a digital academic repository. More than 90% of respondents rated online environments as providing useful tools. Given that MerlArchive provides a logical and connected space for both study and teaching, it offers an online repository that is more organized than other commonly accessed platforms.

Second, the survey data indicates a clear demand for a single access point. Academics access existing works, such as journals and theses, from various locations. Participants overwhelmingly supported having a single repository to collect, organize, and preserve academic materials. This aligns directly with MerlArchive mission to organize material by department and course to provide a way to access the material.

Third, accessibility emerged as a major need. Participants emphasized the urgency of being able to access research works from anywhere, at any time. MerlArchive directly addresses this by enabling access on any web-enabled device, ensuring that students and faculty are not limited to the physical library.

Fourth, the largely positive feedback on the AI-voice searches confirmed student acceptance of the integration of new technology to enhance research activity. The use of Natural Language Processing (NLP) reduced manual typing and increased speed of searching, evidence of user acceptance of electronic innovation in academic processes.

Finally, stakeholders such as librarians and professors acknowledged that MerlArchive is both student-centered and supportive of academic management. For librarians, uploading, cataloging and archiving digital thesis works enhances accountability in producing organized and accessible outputs and reduces repeated manual work. The feedback suggests that MerlArchive does successfully address accessibility and functionality to support both students and faculty in advancing a university feeling of academic quality at Universidad De Manila.

Ethical, Security, and Accessibility Considerations

Beyond merely being functional, MerlArchive also integrates mind sets for ethics and security as it relates to academic documents. The system uses a role-based access system: librarians are permitted to upload and archive works, while students are only permitted to view and search the archive. This protects the integrity of documents and prevents users from altering or modifying documents or the information contained in the documents without express authorization. All materials are held in a secure database to ensure materials are held anonymously/ confidential, and to maintain compliance with intellectual property rights and ownership of the works. In addition, user-friendly navigation and voice search features support additional access for students with typing limitations or needs. By incorporating these types of methods, MerlArchive is compliant with ethical standards set out by academic institutions, and provides equitable scholarly access.

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CONCLUSION AND RECOMMENDATIONS

Conclusion

In summary, MerlArchive has been an effective system that enhances access, organization, and storage of academic materials for students and faculty at Universidad De Manila. The system enables students and faculty to store data securely in a single repository. MerlArchive organizes the academic works of students and faculty in thesis, research papers, and e-books. The system allows students to filter based on the department and course code, which improves the precision and convenience of searches. Additionally, the system allows students to explore thesis or research papers using keywords or by using a voice input powered by Natural Language Processing (NLP), providing students with an expedient and flexible method of exploring materials. One feature of interest, all works of academic merit uploaded to MerlArchive by students or faculty include citation details in APA format that are automatically generated. The benefit to students is substantial. The student can cut and paste citations directly into their research project, while submitting various academic works accumulated throughout the degree program, while saving time by not worrying about whether communications should be considered proper academic referencing. To the library, MerlArchive offers library staff timely measures for uploading documents, approving documents, and organizing documents, while storing and archiving only verified and finalized academic work. The overall project proceeded according to the Waterfall model, stage by stage, providing for clear guidance from inception to deployment. As a modern system, the role-based interface, APA reference output feature, and excellent support from students and faculty provides confidence that MerlArchive successfully met its aim of developing a reliable and contemporary academic repository that facilitates continuation of academia either as study materials or research.

Recommendations

Based on the results of the study, the proponents recommend the following for the future improvement of MerlArchive:

Incorporating Machine Learning - Combination - Build a smart recommendation feature that can recommend related thesis to students based on metrics such as "most viewed, most clicked, most cited," or personalized recommendations. Similarly, students can also "heart" or "save" a thesis for use later.

Security by Blockchain - Developing smart contracts using blockchain increased the level of security around academic materials. This will secure digital thesis by protecting tampering from digital identity, ensuring that only verified students and faculty of Universidad De Manila have access to the system, such as Digital thesis.

Interactive User Engagement - There can be more interaction, tools such as comment sections, feedback ratings, and discussion threads for ideas to enhance teamwork and collaboration in the repository for students and faculty.

Mobile App Version - Developing a mobile application, or a fully responsive mobile site that will make easier access for students with smartphones. MerlArchive will be more accessible every time and everywhere.

Added Content - Over a period of time, the system could include not only thesis but also journals, research articles, and other learning resources to diversify academic materials available for students and faculty. With these enhancements, MerlArchive can be more robust, secure, and reliable as a digital academic library; to service and develop the learning & research endeavors of Universidad De Manila.

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