# Papyres is a thesis management system

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## Abstract

In the context of an organization's R&D department, researchers often access, analyze, and use massive amounts of literature; yet, no current tools or solutions provide the whole set of features needed to efficiently manage these resources. To be more specific, bibliography management systems do not aid researchers with material handling or location; all they do is handle citations and references. However, although specialized search engines and systems that propose research papers may help researchers locate new resources, they still can't help them manage those materials effectively. Last but not least, corporate content management systems do a good job of handling information and resources, but they aren't made to handle research articles. The novel management system proposed in this research is the research paper management system. In addition, we will exhibit the Papyres system—which incorporates many tools and capabilities, including Web 2.0 technology—to exemplify our approach. Using this system, scholars may organize and share materials, keep track of citations, and make changes to them. The Papyres implementation and validation have been updated, and that concludes our report.

## 1 Introduction

Articles pertaining to research and development are often accessed, read, and saved by researchers working in this field. The proliferation of digital libraries like as IEEExplore [1], the ACM digital libraries [2], and SpringerLink [3] has made it possible to save and make available online electronic versions of most of these research articles. Specifically, compared to their traditional paper equivalent, these papers are much easier to keep and edit in their electronic form. Bibliography management software really facilitates the organization of document citations into various formats (IEEE, APA, etc.) and the tracking of references. Specifically, solutions such as BibTeX [6], WinBib, BibTool, and Bibshare allow researchers to enter article information and even provide a link to the paper stored in a folder for easy access. Scholars may also use them to arrange articles into libraries and exchange references between themselves. But researchers lack key capabilities that bibliographic management systems provide. Finding novel materials is a common necessity for researchers. Academics now have access to a plethora of resources, including digital libraries, high-quality conferences, and freely accessible periodicals, making research paper recommendation systems essential. Because of this, picking out the items that really pique their attention becomes a daunting and daunting task. Automatic suggestions based on a variety of data are provided to consumers by recommender systems [7]. Systems such as Knowledge Sea II [8] and TechLens [9] provide paper suggestions based on a range of parameters. Knowledge Sea II is one such platform that uses research papers as teaching tools, allows users to rate and comment on them, and then uses those reviews to suggest related articles. By contrast, TechLens builds a profile from the users' references and uses it to inform its recommendations. On the other hand, certain aspects of research paper subjects remain unaddressed. As an example, when a researcher reads a paper, he evaluates the data, comments on the arguments put out, and checks the study's methodology and findings. Nevertheless, researchers are left without a comprehensive set of tools for evaluating and organizing such analytical data by neither bibliography management systems nor recommender systems. Because they expose the researcher's implicit knowledge, these subtleties are vital. Specifically, when analyzing a publication, a researcher draws on certain areas of expertise, such as knowledge of relevant previous work or how to evaluate and criticize the substance of a research piece. Enterprise content management (ECM) software like LiveLink [10] may help with the management of such tacit knowledge. Be that as it may, these solutions were tailor-made for the business environment and its unique paperwork, projects, procedures, etc. Consequently, despite the extensive feature set of these systems, the most majority are unrelated to research, and the document management approaches fail to account for the specific traits that research articles possess.Thus, we highlight Papyres as a system that exemplifies the methods in this study. We also suggest a new class of systems called Research work Management Systems. Research paper management systems integrate bibliography functionalities with paper recommender techniques and ECM document management tools to offer a suite of features for finding research papers, managing and sharing knowledge about the research literature, and handling and maintaining bibliographies. Papyres also uses Web2.0 techniques and technologies including tagging, rating, and RSS (Really Simple Syndication), and it backs the Web2.0 approach of using community knowledge [11]. This work makes use of the notation resource to refer to many types of research information, such as conference papers, journal articles, books, reports, etc.The structure of the paper is as follows: In section 2, we outlined the requirements for a system that can handle research papers. Section 3 contains the literature review. In Section 4, the roles of Papyres are emphasized. Section 5 describes the process, validation, and results, while Section 6

summarizes the rest of the study.

Methods for Organizing Research Papers

3In this part, we present the Research Paper Management Systems, a novel kind of content management system. In this article, we will go over the unique requirements and characteristics that must be present in a research and development department in order to efficiently manage research papers.4It is common practice for researchers to begin by organizing their sources' citations. There are a lot of different citation formats, and it may be a pain to keep track of them all and properly format references. Researchers also need features and tools to help them organize and find information effectively. Considering the deluge of research resources now available, it is of the utmost need to arrange and make easily discoverable all of the available materials. For example, it is common for scholars to have to scour their own libraries for books authored by a certain author or published in a specific year in order to find relevant works.5As scholars seek for new sources, it is equally important to help them filter out undesirable content. These days, most researchers study at least some of the material before deciding whether it meets their content and quality criteria.

7In contrast, researchers often annotate resources; hence, they need an easy method to arrange these annotations and monitor the resource's status. That is, when researchers come across a resource, they need to swiftly assess whether they have read it before, taken notes or written comments about it, evaluated those remarks, and if the resource was informative and interesting.

8It is essential for researchers to freely share information with one another, particularly when it comes to implicit knowledge about resources, such how good they are and what linkages they have with other resources. Nevertheless, researchers should use caution when determining the amount, kind, and recipients of the information they provide. On top of that, there are authors and sources that researchers need to keep an eye on. If a researcher finds some significant and encouraging work, for example, they may be keen to keep an eye on any further developments. As you will see in the next section, none of the present choices entirely satisfy the researchers' needs.

Cutting Edge

8.1 Systems for Managing Bibliographies

Researchers and writers may make use of bibliographic citation management systems, which are also called reference management systems or citation management systems, to keep track of and make use of bibliographic citations. Bibliographies, or lists of references in books or research papers, may be generated by writers using citation management systems like EndNote, BibTeX, or CiteULike. Databases or repositories for bibliographic references are common components of such system packages, as is a mechanism for producing selected reference lists in the many forms demanded by publishers. Also, most bibliography management systems are compatible with word processors, so you may have reference lists automatically generated inside the article itself in the format you want.

Also, you can import and export bibliographic data to and from the management systems, and there are programs that let you group references, including EndNote, BibTeX, and CiteULike. In addition, scholars may form groups to talk about and exchange references using CiteULike's community feature.

8.2 Discovering Research Articles

Because there are so many research papers available and because research conferences and journals are growing in popularity, it is becoming harder for researchers to identify relevant materials fast. In reality, in 2003, peer-reviewed Scientific & Engineering journals produced about 700,000 publications, as reported in the Science Citation Index (SCI) and the Social Sciences Citation Index (SSCI) [12]. Therefore, recommender algorithms have been the subject of much work to help scholars identify appropriate study resources [8, 9]. As an example, Knowledge Sea II [8] accepts scholarly articles as shared educational resources and lets users rate and comment on them before acting on recommendations. When it comes to making suggestions, TechLens [9] uses a hybrid of Collaborative and Content-Based methods [13]. Further, using the user's own citation libraries to enhance their profile and produce the recommendation is proposed as an improvement to TechLens by Nishikant et al. [14]. A new approach, Multiple-Criteria Decision Aiding (MCDA), was introduced by Matsatsinis et al. [12]. A common tactic in operations research, decision making theory is the foundation of this approach. Tang et al. [15] offers an alternative recommender system that accounts for educational factors. The recommender system, in a nutshell, bases its suggestions on the pupils' current skill levels. Comtella is another platform for education that allows students to share technology with one other [16]. In order to motivate and acknowledge the students, Comtella additionally employs a reputation structure [17].

On the other side, Google Scholar [19] and CiteSeer [18] are search engines that are tailored to locate academic papers. CiteSeer offers citation analysis, including the frequency and journals of a study's citations, with a particular emphasis on computer and information science literature. Google Scholar, on the other hand, has a larger collection of research articles and sorts them according to factors including the article's full text, author, journal, and citation frequency.

8.3 Systems for the Management of Enterprise Content

Organizations, teams, and individuals may benefit greatly

from enterprise content management (ECM) systems because they streamline the processes of storing, sharing, managing, and retrieving vital information and documents [20]. Institutions use systems like LiveLink [10] and Documentum [21] to manage their information and materials. Management of emails,
archives, business processes, documents, collaboration, and digital assets are all part of these systems. Efficient document management tools enable users to easily oversee every step of an electronic document's lifecycle. These tools include features like livelink's nine levels of permissions, the ability to check-in and check-out documents, dynamic references, nicknames for documents and folders, email notifications for specific repository events (like a document's update), complete audit trails of all actions taken on documents, and the ability to apply custom metadata.
9Tires made of asphalt
**s**olid, specialized systems that allow researchers a variety of functionality—those are the multiple systems outlined in the previous paragraph. Unfortunately, researchers have more needs than any of these platforms can now address. Although bibliography management systems enable citation and bibliography maintenance, they do not aid researchers in discovering new sources of information or in efficiently managing research resources. Paper recommendation systems are useful for assisting researchers in locating appropriate readings, but they are inadequate for handling citations and other resources. Despite offering all the features needed for document management, ECM systems don't always manage citations, which is a major issue for research papers. Therefore, Papyres is a great tool for researchers to use when trying to keep track of and make the most of their available funds. Papyres integrates features of bibliography management systems, paper recommendation algorithms, ECM document management tools, and Web2.0 approaches to provide researchers with a comprehensive environment for maintaining research material, using it, and sharing what they've learned. Figure 1 shows the Papyres process, and the sections that follow provide further detail on it.

9.1 The Availability and Addition of Resources

Adding research papers or resources is the initial step in utilizing Papyres, after registering of course. Ideally, researchers would have access to the material digitally in order to do this. With this method, the researcher may simply scan the document and enter the necessary bibliographic information into the system. This includes the title, authors, and format of the source (book, conference paper, journal article, etc.). The inclusion of the electronic copy of the material is preferred, but not required. Indeed, when using a paper resource, researchers need only provide the reference; while using an online resource, they need only include the URL. Even so, it is best to have an electronic version of the resource incorporated with Papyres in order to make the most of its features (which will be explained later). Drawing inspiration from IEEE Learning Object Metadata [22], Fig. 2 displays the metadata of every resource.

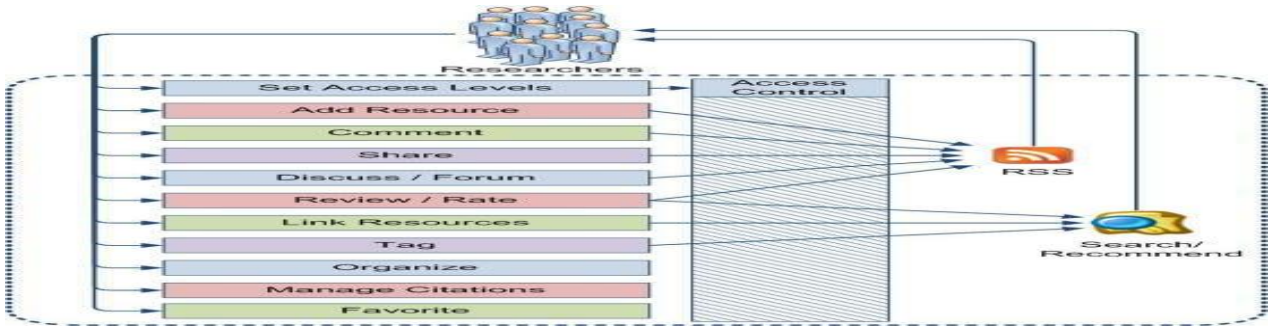
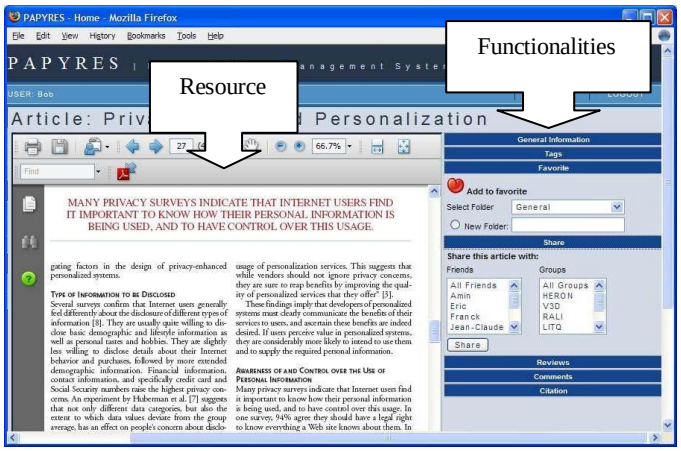



**Fig. 1: Papyres process illustration**

Under the general category, you may find information on resources such as their titles, identifiers (which are unique within Papyres), and types (surveys, experiment reports, new research, etc.). Typically, the resource's producers will provide the Keywords, which should be relevant to the content of the resource. Researchers decide on tags, which are also connected to the content of the resource. The language used to write the information is also included in this wide category, as is a a synopsis of the work and, if applicable, its ISSN or ISBN. The contributor category includes the following details: the date the resource was donated, the name of the contributor, their position, and their user ID within Papyres. This information is used to identify the contributor. Information on the resource's technical aspects, such as its file type, size, storage location, and prerequisites for access, are included in the technical category. When dealing with web-based resources, keep in mind that the location will include the URL. In the bibliography, you can find all the information you need to construct the citations. Additionally, when adding a new resource, you must indicate whether or not it is available. Papyres scholars may choose to make a resource private, accessible to certain organizations, or publicly available to everyone. Afterwards, scholars may




find other resources to work with. They are free to change the level of access from private to group to open as they see fit. Before reducing the quantity of availability, they should make sure no other researcher has accessed and used the resource. Once a researcher prints, copies, or distributes a paper article to one or more of his colleagues, he immediately loses ownership over the material and has no further control over how they utilize it in a conventional context.

associates make use of or disseminate the piece. Papyres simply allows the contributor to adjust the availability of resources. An individual cannot utilize a resource that a researcher has restricted to a certain group if they are a member of that group. share the resource with other Papyres users who are not also a part of the restricted group.

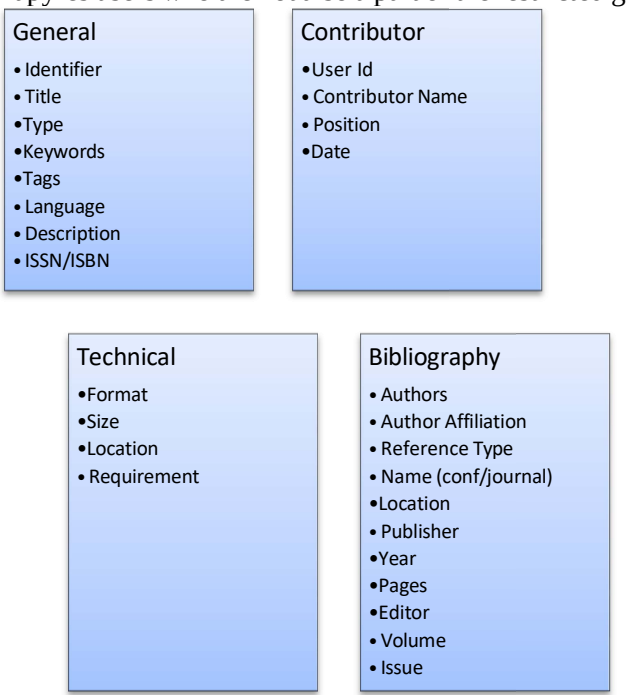



**Fig. 2: Resource Metadata**

### 1.1 Accessing and Using Resources

Papyres allows researchers to annotate resources as they read them. You may choose to make these notes private, available just to the researcher, shared with a specific group, or public to everyone using Papyres. If the researcher has any thoughts or comments on the source, they may record them in the notes. Important as they are now, these notes will serve the researcher well in the future by helping him recall specific details from the appropriate source. The remarks might be related to the resource as a whole or to one of the predefined components below: Concise Synopsis, Context, Relevant Past Work, Issue, and Introductionought to have been included in the literature review but was omitted. Therefore, the researcher connects r2 to r1's State of the Art by means of a complement connection. Conversely, a general support connection might be added from r1 to r3 if the researcher discovers that the results of r1 provide more support for the hypothesis stated in r3. Here, "generic" means that the connection is between the resources in general, rather than between any particular sections of those resources. Important as they are, these connections do represent researchers' tacit knowledge, which would otherwise be lost if the researcher retired or left the firm. The process of accessing a Papyres resource is shown in Fig. 3. The article is shown on the left side of the screen, while the researcher may use multiple tools on the right side to do things like tag, favorite, share, review, comment, and read citations in different formats.

**Fig. 3: Accessing a resource in Papyres**

### 1.2 Organizing Resources

Papyres offers the option to group materials into folders so that they may be conveniently managed and located. As a result, scholars have the choice to digitally arrange their materials into several categories or folders. For instance, a researcher could wish to compile all the sources he utilized for a certain research project or even the references he referenced in a specific publication. In this situation, researchers may make the necessary folders and arrange the needed materials inside of them. Further flexibility in resource organization is offered by the possibility of subfolders inside a folder. As one example, a researcher

the following: a statement, proposed work, implementation, testing, and

Organizing many sources from the same Results, Discussion, Conclusions, and Future Works may be necessary. A researcher may thus add one or more comments to one or more areas of a resource and determine the availability of those comments individually. Depending on the conference year, the researcher may attend conferences in addition to taking notes. In this instance, the researcher first creates a folder for the conference; inside the conference folder, he then adds the necessary materials and establishes a subfolder for each conference year. cite additional sources by referencing particular areas of the current Keep in mind that a resource may be divided up into many folders.useful tool. Another resource that is related to the one being studied could actually be known to the researcher. Therefore, Papyres also provides views that enable researchers to investigate specific resources inside a folder. Opinions are backed byReading the reference information of the other source could provide the researcher either support or criticism, or maybe even both. disagreement onshowcase, use, or be analogous to the materials found in a certain folder belonging to a particular

author.It's worth noting that a popular idea or assertion lends credence to the connection resource. There will be no return. released in conjunction with an identified conference or date. Keep in mind that the researcher may use more than one connection criterion; in this case, the current resource may function as both the endpoint and the starting point of the link between the two. As an example, when reading the State of Art of one resource (r1), the researcher can find that another resource (r2) enhances the screening technique even more. Finally, it is important to note that Papyres provides the default folder all, which shows all of the researcher's materials (Fig. 4).

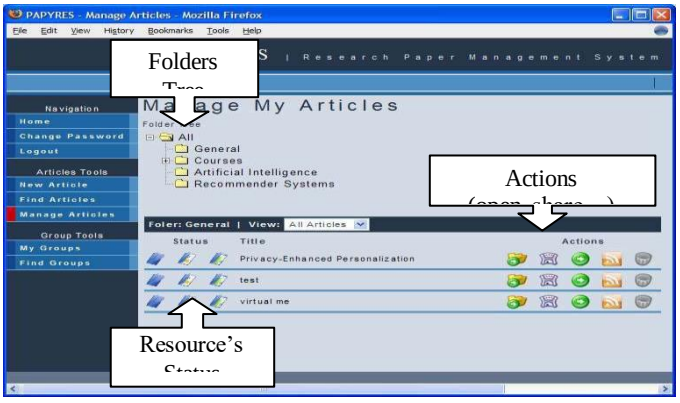



**Fig. 4: Organizing resources**

### 1.3 Reviewing and Discussing Resources

1.4There are two main ways that researchers might look at Papyres' resources and evaluate them. A researcher may begin by outlining the resource in general. The researcher may also annotate the resource using numerous review texts. For instance, the researcher may break the study down into parts that concentrate on certain aspects of the resource. In this way, the researcher may write up two sets of evaluations: one for the current state of the art and another for the suggested method. Papyres has already suggested the following sections: an introduction, a state of the art, a proposed work, sections on validation and implementation, sections on conclusions and future work, and finally, references. The former two put the study in context, while the latter two highlight the resource's work. An increase in adaptability and a simplification of resource appraisal are two benefits of such a partition. It is true that researchers may learn everything they need to know just by perusing the reviews of the specific parts of a resource that pique their interest.

The second step is to provide the researcher with a set of evaluation questions that pertain to various parts of the collection. The assessment questions rank various aspects of the resource from 1 to 5. These include: contribution, which includes the significance of the issue addressed and the proposed solution to the research community; originality, which evaluates the level of innovation in the work; an examination of the literature to determine its thoroughness and appropriateness; and finally, an evaluation of the resource's overall quality. Organization and Readability: Check for clarity and organization in the content; Whether the proposed approach is technically sound, well articulated, and all-encompassing; Methods of testing to ascertain whether the methodology is defined precisely and if the data presented provide sufficient evidence to back up the theories; Finally, a comprehensive evaluation of the content; and Reference Quality to check for missing or out-of-date references. Using numerical numbers to evaluate the resource has two benefits. It quickly provides an idea of the value of the resource's changeable parts, which is the first benefit to the research. Second, these ratings are used by recommender systems, which will be covered in the following part, to guide researchers to the right resources.

1 and 3/4On the other hand, Papyres provides a forum where a group of academics may discuss and evaluate a resource. Such an approach yields a twofold benefit. To begin with, the forum eliminates the need for researchers to physically get together and allows them to asynchronously discuss and evaluate the resource, which facilitates the transmission of information. Indeed, researchers are able to participate at their leisure in online discussion forums due to their asynchronous nature. Secondly, it may be possible to swiftly record the discussion and analysis for use at a later date.

### 1.6 Papyres Resource Locating

Papyres provides researchers with a plethora of tools to help them discover new items that have been shared and archived there. A hybrid recommender system really serves as the first tool for resource discovery [13]. Hybrid recommendations use many recommendation algorithms to produce the advice. Feature Augmentation, Mixed, Weighted, and Cascade are just a few of the many hybridization approaches available. In Papyres, the recommender system employs a hybrid method called cascade, in which it provides output using one recommendation technique and then improves that result using a second recommendation technique. The first method for generating suggestions is known as content-based recommendation (CB recommendation). When this occurs, the recommender system takes into account both the products' features and the user's preferences to provide a recommendation. Therefore, once the researcher specifies the attributes of the resource he is interested in, the recommender system discovers the resources that are the greatest fit. For instance, a scholar looking on "recommender systems" might prioritize works released after 2005. This example shows how the CB recommender system can discover all the materials that meet the researcher's requirements, such as having a publication date older than 2005 and using the phrase "recommender systems" as keywords. However, the CB filter alone is not enough. Actually, certain aspects of a resource can not be suitable for his needs, even if it completely meets the criteria set by the researchers. Some researchers may have a preference for more theoretical, abstract topics, while others may be more interested in more practical, hands-on studies. Consequently, the second recommendation approach, Collaborative Filtering (CF) methodology, is used. Here, the recommender system compiles item ratings from users, finds people who have similar ratings, and then makes suggestions based on those connections. So, the CF recommender looks at how other researchers have rated

resources and attempts to guess how the researcher would rate the present resource, based on whether or not the resource meets the researcher's expectations. Two phases make up the CF process: one must first ascertain the researcher's immediate vicinity, which comprises of the k researchers who are most comparable to the researcher in terms of ratings. Using the highlighted Pearson correlation coefficient, we can determine how similar researcher an is to his neighbor u using the following equation:$\sum m\ (ra,i - \overline{ra}) \times (ru,i - \overline{ru})\ sima,u =$

$\sum\sum m(ra, - \overline{ra})2 \times \sum m(rf,i - \overline{fb})2$

workers that are using Papyres. Here, the researcher is really advising his coworkers to use a certain site using RSS.

Where m is the total number of items, $ra$ is the mean rating supplied by researcher a, and $\overline{ra}$ is the rating given to resource i by researcher a. The next stage is to forecast the researcher's rating of an unrated resource using this neighborhood. To calculate these forecasts, we use the following formula, which takes the weighted average of the neighbor's mean deviations:

the sum of all the elements in the set $(rb, - \overline{rb})$ multiplied by $yima,b$

5. Validation and Implementation

The web-based system Papyres is built on top of MySQL, PHP, Javascript, and AJAX. So far, we have simply built a working prototype; features like the forum are still in the works. However, in order to demonstrate the system's functionality for validation reasons, skeleton pages were used. Regarding citations, Table 1 provides a summary of the different systems' citation support,

This is equal to $ra$.

k=1, which incorporates Word Processor integration, Import/Export, Formatting, and Management.

This is where k is the number of researchers in the neighborhood, sima,u is the similarity between researchers a and u as determined by equation (1), and pai is the rating prediction of researcher a for resource i. We employ a group of around thirty researchers, as suggested in [23].

As previously said, researchers may separately analyze the various elements of a resource when reviewing an article within Papyres, so they can select the segment or component of the resource that interests them the most. For example, a resource with a strong State of the Art might be valuable to a researcher interested in doing a literature evaluation on a specific issue, regardless of how intriguing the recommended study is. The CF recommender considers the ratings of the specific portion of a resource that the researcher is interested in when making a recommendation. If that isn't the case, the CF recommender will use the overall rating of the resource.

The second way that resources are found is via the links that the researchers provide. Therefore, a researcher may take note of and pursue these links while he is at a resource. Also, the researcher has some leeway in deciding which kind of links to look at. Think about the researcher who wants to do a literature review on a certain topic again. He has access to all resources with a complementary relationship to a resource's State of Art once he finds one with an interesting State of Art. Indeed, similar to how researchers often examine citations inside a source, they may also examine the many links to and from other sources. Scholars may stay updated about varied sites with Papyres's smart collection of RSS feeds. Distributing continuously updated content is made possible using a family of Web feed formats known as RSS (Really Simple Syndication). A feed, the technical term for RSS documents, may often include either the whole article content or a brief summary of the linked page. If you want to keep up with the latest developments, RSS makes it easy. To make sure that researchers are notified of developments that interest them, Papyres specifically uses RSS feeds. The researcher may then choose to subscribe to the author's feed in order to get updates whenever new resources are added to the repository. Papyres are known for their watch functionality. By adding a watch to a resource, researchers may get RSS notifications if another resource by the same author addressing the same subject is uploaded to Papyres. This is useful for researchers who find a particular resource intriguing and wish to follow up on the study provided there. Furthermore, academics have the opportunity to work together and share resources.

**Table 1: Citation tools comparison**

| | *Manage Citations* | *Format* | *Import/ Export* | *Word Processor* |
|---|---|---|---|---|
| **EndNote** | x x x | x x x | x x x | x x |
| **BibTeX tools** | | | | |
| **CiteULike** | | | | |
| **Knowledge Sea II** | | | | |
| **TechLens** | | | | |
| **LiveLink** | | | | x |
| **Documentum** | x | x | x | |
| **Papyres** | | | | |

Table 2 provides a summary of the features offered by the different systems that allow users to manage resources. These features include the ability to see the resource's status (read, commented, reviewed, etc.), make comments or tags, review the resource, debate it in a forum, and get updates via RSS feeds. Keep in mind that although CiteULike does provide review and comment features, Papyres' features provide more flexibility due to their finer granularity. Contrasted with Papyres, which allows scholars to submit comments on each part individually, CiteUlike simply gives general remarks on the resource.

**Table 2: Functionalities comparison**

| | *Status* | *Comments* | *Review* | *Tags* | *Forum* | *RSS* |
|---|---|---|---|---|---|---|
| **EndNote** | | | | | | |
| **BibTeX tools** | | | | | | |
| **CiteULike** | x | x | x | x | x | x |
| **Knowledge Sea II** | x | x | x | x | | |
| **TechLens** | x | x | x | x | | |
| **LiveLink** | x | x | x | | | |
| **Documentum** | x | x | x | | | |
| **Papyres** | x | x | x | x | x | x |

In addition, Papyres provides a multi-criteria assessment to analyze different parts of the resource (originality, contribution, etc.), while CiteULike just uses one criterion, an overall rating of the resource.
Resources may be organized into Folders and Sub-Folders, access can be controlled and classified, and custom links can be created to indicate linkages between resources. Table 3 compares these features.

**Table 3: Document organization comparison**

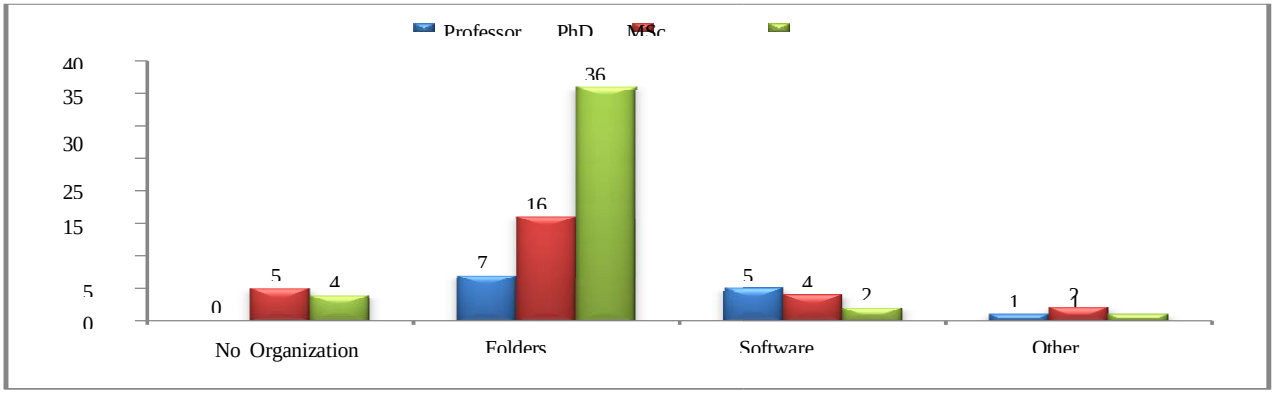



**Fig. 5: Organization habits highlig t**

In addition, the majority of respondents said that they take notes often while reading an article when asked to rate the frequency on a scale from 1 to 5 (1: Never - 5: Always) in survey question #5. Also, in the sixth question, when

| | *Folder* | *Sub- Folders* | *Access Control* | *Classification* | *Custom Links* |
|---|---|---|---|---|---|
| **EndNote** | x | | | | |

| | | | | | |
|---|---|---|---|---|---|
| **BibTeX tools** | x | | | | |
| **CiteULike** | | | x | | |
| **Knowledge Sea II** | | | | | |
| **TechLens** | | | x | | |
| **LiveLink** | x | x | x | x | |
| **Documentum** | x | x | x | x | |
| **Papyres** | x | x | x | x | x |

1.4 What Happens During and After Validation

There were two sections to the validation procedure. To start, we asked whether people use a software system to keep track of their article notes. The majority of people said no, placing it in the "never" category. Picture 6.

A survey was sent to all participants to inquire about their research habits. The survey included topics such as resource organization, the use of bibliography management software, and more. After finishing the survey, participants may explore and use all of Papyres' features. Lastly, the respondents had the opportunity to provide comments and propose any missing features, as well as give an overall review of the system based on the offered functionality and simplicity of use. The assessment method included 83 responders, including 13 professors, 27 doctoral students, and 43 master's degree candidates. The review process began on February 4, 2008, and ended four weeks later. In addition, Papyres's objectives and aims were briefly presented before the review process began.

The survey's findings back with Papyres' central hypothesis: that researchers may benefit from a Research Paper Management System that would allow them to make better use of their available resources. The majority of the researchers who participated in the study do, in fact, organize their data into folders by hand, as shown in Figure 5. In addition, bibliographic management systems were employed by the respondents who said they used software to arrange the materials. Note taking and management systems like this have their benefits when contrasted with manually sorting the resources into folders, although they are still restricted.

As a last point, most people said they only care about some sections of resources, including the State of Art, when asked to rank their interest in these sections on a scale from 1 (never) to 5 (often).

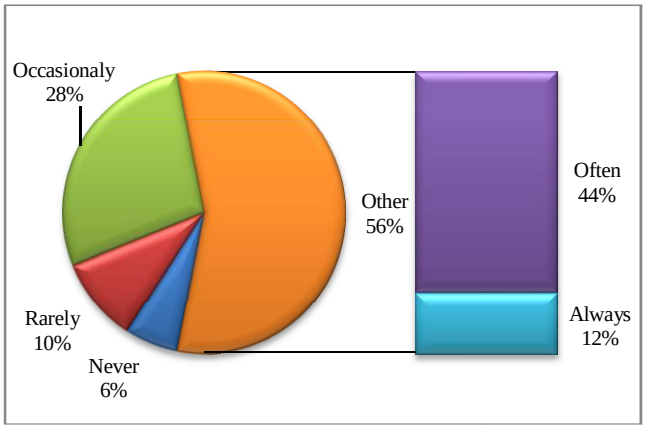



**Fig. 7: Interest of researchers in parts of resources**

On a scale from 1 (poor) to 5 (excellent), the average rating for Paypers' features was 4.43. Papyres would also be asked to rate how likely it is that they would be to suggest them on a scale from 1 (never) to 5 (often). In addition, we are thinking about adding a confidence metric for users so that we may evaluate the evaluations based on their actual experience. Last but not least, we are looking at ways to include the respondents' suggested visual depiction of some parts of articles for their search quite regularly (Fig. 7).

interauthor/resource interactions into the validation process.

2 Final Thoughts and Plans for Progress

Research and development researchers deal with voluminous literature, but current systems lack the full suite of capabilities necessary to efficiently manage this resource. This paper proposes a new class of management systems called Research Paper Management Systems, and our system, Papyres, is utilized as an example of one of these systems. With Papyres's bibliography management and editing tools, researchers may easily organize and share resources and information. In addition, 83 respondents evaluated and tested Papyres, and the findings are favorable. The average rating for the functionality delivered by Papyres was 4.43 out of 5. One important contribution of this study is the framework it defines for research paper management systems. We also propose state-of-the-art ways to fine-tune search and recommendation algorithms, such as using resource links to access researchers' implicit knowledge and assigning different degrees of grade to resources. There are still a few elements that need implementation, such as the discussion forum, and evaluation of the recommender system's efficacy. While the recommendation system outlined in Section 4 is well-grounded in fundamental concepts, it requires continuous use

to collect sufficient data for accurate assessment and fine-tuning.

Works Cited

IEEExplore is the first. Visit our website at http://ieeexplore.ieee.org/. February 2008 retrieved.

ACM Digital Library, [2]. Website accessible at http://portal.acm.org/dl.cfm. February 2008 retrieved.

(SpringerLink, n.d.). Access the website at http://springerlink.metapress.com/. February 2008 retrieved.

EndNote [4]. Visit their website at http://www.endnote.com/. February 2008 retrieved.

[5] Cite your work. Visit our website at http://www.citeulike.org/. February 2008 retrieved.

Sixth, BibTeX. Visit our website at http://www.bibtex. rg/. February 2008 retrieved.

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Lastly, regarding the additional features they would want to see included in Papyres, one intriguing and recurrent recommendation was to incorporate visual representations of the links between resources and authors. In particular, following recommendations were made to graphically depict the most prevalent subjects by aLibraries (JCDL 05) Denver, USA, 2005, pages 9–18.

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[10]Ten. Livelink ECM. Visit their website at http://www.opentext.com/2/sol-products/sol-pro-llecm10.htm. February 2008 retrieved.

[11] "What Is Web 2.0?" by T. O'Reilly, 2005.

[12] "A System based on Multiple Criteria Analysis for Scientific Paper Recommendation," in11th, N. F. Matsatsinis, K. Lakiotaki, and P. Delias.

presented at the 2007 Panhellenic Conference on Informatics in Patras, Greece, on pages 135–149, or a graph that highlights inter-article citations (like a tag cloud).the connections between articles, with articles serving as nodes and citations as edges.

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[17] In the 40th Annual Hawaii International Conference on System Sciences (HICSS 2007), Waikoloa, Hawaii, 2007, Y. Mao, J. Vassileva, and W. Grassmann presented "A System Dynamics Approach to Study Virtual Communities" (p. 178a).

[18] "A System for Automatic Personalized Tracking of Scientific Literature on the Web" (pp. 105-113), presented at Digital Libraries 99: The Fourth ACM Conference on Digital Libraries in 1999 in Berkeley, USA, was written by K. Bollacker, S. Lawrence, and L. Giles.

The year 19 Academic Search Engine. Visit our website at http://scholar.google.ca/. From February 2008, it was restored.

[20] In the 2002 IEEE International Conference on Data Mining (ICDM) in Maebashi, Japan, X. Huang, A. An, N. Cercone, and G. Promhouse presented their work titled "Discovery of intriguing association rules from Livelink web log data" (pp. 763-766).

http://www.documentum.com/ is the website of Documentum (21). From February 2008, it was restored.

[22] is a "Standard for Learning Object Metadata," 2002, an article by the IEEE Learning Technology Standards Committee.

[23] "Content-Boosted Collaborative Filtering for Improved Recommendations," in Proceedings of the Eighteenth Annual Artificial Intelligence Conference (AAAI-02), Edmonton, Canada, 2002, pp. 187-192, by P. Melville, R. J. Mooney, and R. Nagarajan. On a scale from 1 (poor) to 5 (excellent), the average rating for Paypers' features was 4.43. Papyres would also be asked to rate how likely it is that they would be to suggest them on a scale from 1 (never) to 5 (often). In addition, we are thinking about adding a confidence metric for users so that we may evaluate the evaluations based on their actual experience. Last but not least, we are looking at ways to include the respondents' suggested visual depiction of interauthor/resource interactions into the validation process.

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[10]Ten. Livelink ECM. Visit their website at http://www.opentext.com/2/sol-products/sol-pro-llecm10.htm. February 2008 retrieved.

[11] "What Is Web 2.0?" by T. O'Reilly, 2005.

[12] "A System based on Multiple Criteria Analysis for Scientific Paper Recommendation," in11th, N. F. Matsatsinis, K. Lakiotaki, and P. Delias.

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[16] In "Harnessing P2P Power in the Classroom," J. Vassileva cites work presented at the 2004 Intelligent Tutoring Systems (ITS) conference in Alagoas, Brazil. The paper spans pages 305 to 314.

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