Mobile technologies and information retrieval

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Abstract
The nature of information access and retrieval changed drastically over the past ten or so years with the advent of the World Wide Web and digital libraries. Web search engines brought significant changes in terms of sophistication in indexing and searching. As discussed in this paper users in today's web and digital library world can get access to information through mobile which is handy and less weight and the information as and when required.

Keywords: Information retrieval, Mobile computing, Mobile technology, Web search.

Introduction
Mobile information retrieval (IR) refers to the indexing and retrieval of information such as text, graphics, animation, sound, voice, image, video and their possible combinations for use in mobile devices with wireless network connectivity. The proliferation of wireless and mobile devices, such as personal digital assistants and mobile phones has created a strong demand for mobile information content, as well as effective mobile IR techniques. This paper focuses on contributions that expand to satisfy this demand with need new technologies to represent, model, index and recover mobile data. Many different sources confirm the emergence of the mobile era and, therefore, the importance of mobile IR will be even more relevant in the coming years. According to a recent study, mobile devices will surpass computers as the main tool for the Internet.

A Mobile IR user often does not have the time or the inclination to submit a complex query to retrieve documents. Thus, the Mobile IR system has to use additional information to that provided by the query to better understand the user information need. This might include location information, temporal information or any additional kind of information the Mobile IR system has available through the increasing number of sensors of course, the use of such information that we call "contextual" for the time being (this concept will be better explained later on) requires indexing and retrieval models that are more complex than those used in standard IR.The special features of mobile devices make them, in many ways, more advanced and others more primitive than their traditional equivalents.

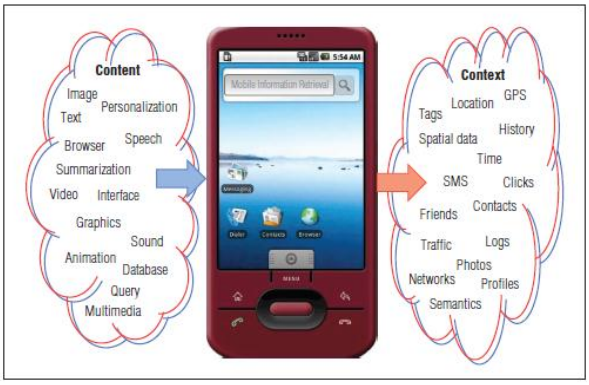

Fig. 1: Overview of Mobile Information Retrieval

The Fig. 1 gives an overview of mobile IR. Traditional IR focuses on the processing of content such as text, graphics, animation, sound, voice, image, video and its different combinations. The mobile IR analyzes both the content and the context to extract useful information and relationships that the traditional IR cannot reproduce. In all of these areas, we have ample opportunities to progress towards exciting discoveries. Context knowledge Mobile devices have more functions.

Content adaptation is responsible for designing the user interface and querying suggestions. The interface design is responsible for the size and resolution of the screen, the type of input, etc., while the interaction design is responsible for the type of input provided, such as the total number of keywords provided. Consultation suggestions are made using ontologies, profile extraction and context awareness. On the other hand, content delivery techniques indicate the original information retrieval procedures that can be used for the mobile platform. In a broad sense, content adaptation complies with input on the mobile device and context awareness analyzes the output of the mobile device to the user, which can also be traced back to the device.

1. **Content Adaptation:** Content adaptation solves a series of problems concerning specific functionalities in the mobile field, such as screen size and resolution, processor used, bandwidth, etc. The content adaptation

approach has two sub-domains such as User Interface Design and Query Suggestion.

Query Suggestion: The Mobile user attempts his/her query in the mobile. It limits the query search before forwarding it to the search engine. The query suggestion can come from the database, from the ontology, from the previous user model or from the past history and from other users to simplify the search.

The query processing depends on the indexing which makes query suggestion easier. So designing of the ontology must be done cautiously, because it is necessary to make the domain knowledge explicit. Preprocessing of the user query can be done easily with the help of better ontology structure.

2. **Mobile User Interface:** The mobile user interface must be developed based on the search engine or information retrieval application, such as the Meta Search Engine, etc. It is possible that all the information retrieved from the user's query does not fit on the small mobile screen, then the categorization as a tree shape, results window etc., can be done to minimize the small screen problem.
3. **Content Delivery Techniques:** The content delivery technique focuses mainly on delivering the best content to users. This can be made possible by approaches such as the use of a back-end server; with good algorithmic models to process the results and better grouping systems for better results.

Approaches for mobile information

The procedure of retrieving information through mobile using a back-end server is as follows:

1. When the mobile user wants to retrieve information, first he has to open his application that has a search interface. The request typed by the user is directly routed to a back-end server through internet.
2. The users request reaches the back-end server. The back-end server is responsible for processing the request.
3. The back-end server searches the web (using crawlers, spiders, etc.) for the relevant information.
4. The relevant information is retrieved (by crawlers, spiders, etc.,) from the web the web servers.
5. The retrieved information reaches the back-end server through internet.
6. The retrieved information is compressed or processed such that it fits the mobile users screen resolution, processing speed etc., the compressed information is then send to the mobile device through internet. The user receives the retrieved information that supports his mobile device.

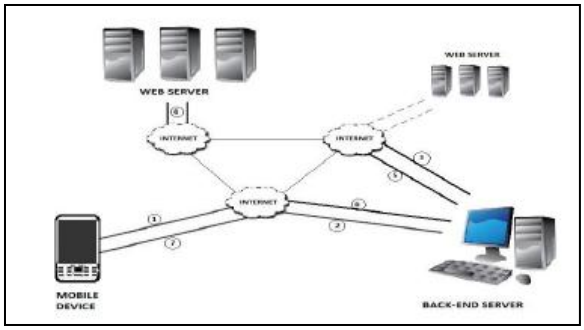

Fig. 2: Method of Retrieving Information

Conclusion

Mobile devices have smaller screens and less processing power than most computers. This technology allows you quick and timeless results of your search for article. Mobile IR research system represents environmental or personal information at different contextual levels and connects those representative values to information sources so that users receive relevant results quickly and conveniently.

Source of Funding

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Conflict of Interest

None.

References

1. Ernesto William De Luca and Andreas Nürnberger (2005). Supporting Information Retrieval on Mobile Devices.
2. W. Aisha Banu, P. Sheik Abdul Khader, and Shriram Raghunathan (2011). *Mobile Information Retrieval: A Survey*.
3. Tsai, Flora S. (2013). Introduction to Mobile Information Retrieval System. International Journal of Advanced Research in Computer and Communication Engineering, 2(3).
4. https://www.ijcsmc.com/docs/papers/July2014/V3I7201462.pdf
5. https://arxiv.org/pdf/1902.01790.pdf
6. http://www.intechopen.com/journals//personalized-mobile-information-retrieval-system

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