MEASURING WEB EFFECTIVENESS: THE USER PERSPECTIVE

While we have learned a great deal about creating large document spaces and accessing these spaces, we know relatively little about the users who deal with a multi-billion-page Web. Access to billions or even millions of documents through an efficient Web search engine does not address the user issues related to effectiveness and quality of the experience. The recent intensity of work on personalization and filtering for pre and post search processing highlights the gulf that remains for users to work in this context effectively. The semantic web initiative holds promise for better categorization of content but does not address issues of evaluating human interaction with Web search engines, including the usability and effectiveness of search tools.

Metrics and methodologies have been developed by the Information Retrieval community to study the effectiveness of retrieval on large homogeneous data sets. New measures are now needed for evaluating retrieval on the Web that go beyond recall and precision and that are user-centric. In May of 2004, we hosted a workshop with over forty participants at the WWW2004 Conference in New York to address issues related to the effectiveness of Web retrieval tools from the user perspective. A key objective of the workshop was to align user focus and system focus by bringing together Web researchers and developers. The workshop provided a forum for eighteen presentations and vigorous discussion. The papers in this special issue grew from those presentations and represent an excellent cross-section of current work on improving Web search effectiveness for the user.

The papers in this issue are organized roughly into three groups to give a flavor of the diversity of relevant user-focused Web research in this growing area: Web search result effectiveness, visualization of Web results, and Web page characteristics.

There first set of four papers are related to the effectiveness of Web search from the user perspective. Rose sets the context for the issue by addressing how Web searching differs from traditional information retrieval. The second paper by Jansen, Spink, and Pedersen discusses the effect of specialized multimedia collections on Web searching. They find that most multimedia searching relates to image. Gnasa, Won and Cremers describe a model of Congenial Web Search in which continual evaluation of Web search results is achieved by using explicit user feedback to generate personalized ranking lists that can also be aggregated and used for topic identification and defining communities of interest. The final paper in this set is by Pun and Lochovsky who examine the use of appropriateness, based on linguistic characteristics of the Web page, to classify search results into scholarly, general interest, and popular.
Two set of papers address issues related to visualization of Web search results from the user perspective. Koshman used TouchGraph, a Web browser that presents search results in a graphic manner that reflects similarity among results. Her results indicate that this type of visualization could enhance Web search effectiveness for users by providing the users with some autonomy over the management of their search results. Spoerri also used visual techniques for presenting Web search results but extended the reach to multiple simultaneous queries or queries submitted to multiple Web search engines. MetaCrystal provides a visual view of the degree of overlap and similarity between result sets as a visual measure of the effectiveness of Web searches.

The final set of two papers address a growing body of work on the identification of feature sets that can be exploited to improve Web search results. The first by Skrop and Dominich examines the effectiveness of acronyms of higher educational institutions as index terms for those Web pages and found that they are not effective. Shepherd, Watters, and Kennedy examine feature sets that can be used to identify the genre of Web pages for potential use in filtering search results. In particular, they report on the effectiveness of differentiating between personal and corporate home pages.

In conclusion, this set of papers brings together studies on the leading edge of Web search effectiveness research from the user perspective. Further research is needed into the cognitive and user aspects of human interaction with Web search engines to improve the interaction between user and system.

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