

# Evaluating Interactive Information Retrieval Systems: Opportunities and Challenges

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## ABSTRACT

Information retrieval or search plays an important role in a wide range of information management and electronic commerce tasks. In spite of the importance of information retrieval, search systems are often poorly designed from a human computer interaction perspective. The goal of this SIG is to articulate some of the opportunities and challenges in designing and evaluating highly interactive information retrieval systems.

## Author Keywords

Information retrieval, Information visualization, User interface, Interactive systems design and evaluation

## ACM Classification Keywords

Database access/Information retrieval, World Wide Web and hypermedia, User studies

## INTRODUCTION

Information retrieval or search plays an important role in a wide range of information management and electronic commerce tasks. On the internet, search portals like Google, Yahoo! and MSN Search are among the most popular destinations. Search also plays a key role in matching people and objects of interest on commerce sites such as Amazon and eBay. In corporate intranets, institutional and government information sites, and personal computers, search is also an important means for enabling people to find information they need. Investments in improved interface design can have wide-ranging impact.

In spite of the importance of information retrieval systems in a wide variety of settings, the human computer interaction aspects of search systems are often poorly designed. The most common search experience is a very impoverished one – a searcher types words into a small box, sees a list of results, and if they don't succeed they try again. Although there is a good deal of research on information retrieval algorithms, much less research has focused on interactive retrieval issues such as query specification, results presentation, interactive feedback, etc. In part this is because humans are more complex than matching algorithms, but also because their motivations and behaviors are more varied and difficult to measure.

## SIG GOALS AND ORGANIZATION

### Goals

The goal of this SIG is to articulate the challenges and opportunities in evaluating highly interactive information retrieval systems. By sharing evaluation experiences, summarizing success and failures of tools or techniques, and identifying key opportunities we can more effectively influence the design of the next generation of interactive retrieval systems.

There have been several research studies in both the CHI and IR communities to develop and evaluate novel information retrieval interfaces, e.g., [1] [2] [5] [9]. Most of these projects have involved laboratory studies of individual system components with a relatively small number of users and tasks (although [1] is an exception). There has been much less work in successfully combining these individual insights or in evaluating different interface ideas in a common environment. Furthermore, few interactive search innovations have been widely deployed. We would like to explore the reasons for the current state of

affairs and to identify opportunities to dramatically improve interactive information retrieval systems.

### **Importance of a CHI Audience**

The design of information retrieval systems has been strongly influenced by computer science and algorithmic perspectives. There has been much less influence and innovation from the CHI community – most search interfaces look very similar, and fail to satisfy searchers much of the time. Designing interfaces to help people express their information needs and understand the returned results, and evaluating the resulting systems are core competencies of the CHI community [1] [4].

### **Assumed Attendee Background**

We hope to attract colleagues with a wide range of perspectives on designing and evaluating interactive information retrieval system – researchers, designers, managers and information professionals who want to improve the end-user search experience. Attendees who have developed or evaluated one or more interactive information retrieval systems are especially welcome. Research on evaluating individual system components (e.g., query specification and disambiguation, spelling correction, results presentation, response time, etc.) are of interest, and research on entire end-to-end systems is of special interest. The SIG is not intended to address general design, information architecture, systems integration issues.

### **Discussion Topics**

There are a wide range of issues in evaluating interactive retrieval systems. The final list of topics will be shaped by the interests of the attendees.

Discussion topics will likely include:

- Examples of successful (and unsuccessful) user interface innovation in information retrieval systems.
- Which evaluation techniques have been most useful (e.g., field observations, heuristic evaluation, design patterns, laboratory studies, analysis of usage logs, etc.) for which interface parameters?
- Which shared resources and/or evaluation environments (e.g., logging tools, common evaluation forums like TREC) can speed progress?
- Which user/task variables matter most in interactive search interfaces (e.g., nature of the search task, individual differences in domain knowledge or search expertise)?
- Can systems be evaluated without pre-specified tasks or comprehensive explicit judgments from users?
- Where are the biggest opportunities for innovation in search interfaces?

We would like to start by hearing briefly about attendees' experiences in designing, deploying and evaluating interactive search systems. Depending on the size of the audience we may break up into groups to focus on sub-themes and then reconvene to identify commonalities.

### **Recruiting and Follow-Up**

Recent search-related Tutorials and Workshops at CHI [2] [8] have generated strong interest from the human-computer interaction community. The organizers represent a mix of university, industry and government perspectives, and are well-connected in the information science and search engines community from which additional attendees can be recruited.

A summary of the SIG will be submitted to the SIGIR Forum and the SIGCHI Bulletin. The CHIPlace web site provides a forum for sharing workshop results and for soliciting further input. We hope that this SIG will be an initial step toward putting user interface issues on par with algorithmic considerations in the design of interactive information retrieval systems.

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