Current Research in Supporting Complex Search Tasks

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ABSTRACT

There is broad consensus in the field of IR that search is complex in many use cases and applications, both on the Web and in domain specific collections, and both professionally and in our daily life. Yet our understanding of complex search tasks, in comparison to simple look up tasks, is fragmented at best. The workshop addresses many open research questions: What are the obvious use cases and applications of complex search? What are essential features of work tasks and search tasks to take into account? And how do these evolve over time? With a multitude of information, varying from introductory to specialized, and from authoritative to speculative or opinionated, when to show what sources of information? How does the information seeking process evolve and what are relevant differences between different stages? With complex task and search process management, blending searching, browsing, and recommendations, and supporting exploratory search to sensemaking and analytics, UI and UX design pose an overconstrained challenge. How do we evaluate and compare approaches? Which measures should be taken into account? Supporting complex search tasks requires new collaborations across the fields of CHI and IR, and the proposed workshop will bring together a diverse group of researchers to work together on one of the greatest challenges of our field.

KEYWORDS

Interfaces, Information Interaction, Information Access, Interactive Information Retrieval, Search Processes, Search Tasks

1 INTRODUCTION

One of the current challenges in information access is supporting complex search tasks. A user’s understanding of the information need and the overall task develop as they interact with the system. Supporting the various stages of the task involves many aspects of the system, e.g. interface features, presentation of information, retrieving and ranking. Many search systems treat the search process as a series of identical steps of submitting a query and consulting documents. Yet information seeking research has shown that users go through different phases in their search sessions, from exploring

Context What are the obvious use cases and applications of complex search? In what sense are these “complex”? What generic characteristic do they share? How can search become an integral part of its context, and the context integral part of search?

Tasks What are essential features of work tasks and search tasks to take into account? And how do these evolve over time? How can complex tasks be decomposed into manageable sub-tasks, and partial results composed into comprehensive answers? How can we monitor and support task progress?

Heterogeneous sources With a multitude of information, varying from introductory to specialized, and from authoritative to speculative or opinionated, when to show what sources of information? When to show more or other types of information than directly requested by the searcher? Do we know when the user has gotten enough?

Search process How does the information seeking process evolve and what are relevant differences between different
Aspects of Seemingly Simple Information Needs” [15]. He presented a talk and as a poster during the interactive poster session.

Each paper was reviewed by at least three reviewers. Paper contributions are presented as a 1-minute booster talk and as a poster during the interactive poster session.

3 WORKSHOP FORMAT

SCST 2017 was a half day workshop on supporting complex search tasks—a workshop proper where discussion is central, and all attendees are active participants.

The workshop started with a full round of introductions of all participants, making everyone feel welcome and part of the workshop. Then, the workshop continued with two short keynotes to set the stage and ensure all attendees are on the same page.

3.1 Keynote Speakers

Mark Hall (Edge Hill University, UK) gave a keynote on “Where does it end? Complex Search Tasks and Evaluation” [12]. He takes an academic perspective and explores the blurring boundary between complex search tasks and the larger work tasks that motivate the search. This has important implications for what aspects of the process we should evaluate and how we do the evaluation in a meaningful and measurable way.

Jussi Karlsgren (Gavagai, Sweden) gave a keynote on “Complex Aspects of Seemingly Simple Information Needs” [15]. He presented the industrial views and discussed how the typical information needs of corporate customers are often posed in short and basic questions but are surprisingly hard to formulate in meaningful queries, and answering them requires complex processes of curating and aggregating diverse and disparate data.

3.2 Paper Contributions

The workshop invited short paper contributions that are presented as posters. We received 11 submissions and accepted 9 (for an acceptance rate of 81%). Each paper was reviewed by at least three reviewers. Paper contributions are presented as a 1-minute booster talk and as a poster during the interactive poster session.
3.3 Breakout Discussions
The second half of the workshop consists of 3-4 breakout groups, seeded from the open research questions (see §2) and the contributed papers, each group thoroughly prepared by a chair who guides the discussion, with examples from relevant IR evaluation campaigns such as the TREC Session and Tasks Tracks and the SBS Interactive and Suggestion Tracks, and from concrete examples of complex support systems with their UX and UI challenges. One of the topics will be an Interactive IR task that is planned for the TREC Tasks Track.1 Finally, the breakout groups report to the audience and a panel of experts, with continued discussion on what we have learned. A report of the workshop including a summary of the break-out discussions will be published as a SIGIR Forum report.

The discussion will continue during a social event in a more informal way over food and drinks, deep into the Oslo night. The organizers have gained a proud reputation for their open and inclusive workshops, leading to new research collaborations, other workshops, and new evaluation tracks.

The workshop will bring together a varied group of researchers—bridging CHI and IR in a natural way—with experience covering both user and system centered approaches, to work together on the problem and potential solutions, and identify the barriers to success and work on ways of addressing them. The format allows us deal with a relatively large number of participants while still preserving the interactive workshop character – the last edition at ECIR’15 had 41 paid registrations (and the head count was even higher on the day of the workshop).

4 RELATED WORKSHOPS
This workshop is a follow-up to the first SCST workshop at ECIR 2015 [8, 9] and is closely related to the Interactive Track of the CLEF Social Book Search Lab of 2015 and 2016 [10, 11]. The Interactive track is focused on the domain of book search, whereas the proposed workshop addresses issues around the search process and system interaction from a broader perspective.

Some of the organizers were involved in the SIGIR 2011 Workshop on "Entertain me": Supporting Complex Search Tasks [3] and in the spin-off TREC Contextual Suggestion Track [5, 6]; in related discussion within the SWIRL ’12: Strategic Workshop on Information Retrieval in Lorne [1]; and the NSF Task-Based Information Search Systems Workshop [16]. There is a broad research agenda emerging that attracts interest from research in all areas of HCl and IR.

The workshop builds on the results of the earlier discussion, and through the CLEF Social Book Search Lab [18] has already been pushing this line of research with a range of user studies, novel user interfaces, and analysis of large scale social data. The workshop will be held to have a more focused discussion based on the results so far.

The workshop provides a comprehensive overview of current work on supporting complex tasks in a variety of settings, and fosters new collaboration within across the fields of CHI and IR, on one of the most important topics in the coming years.

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REFERENCES

1Information about the 2017 Tasks Track is available at http://www.cs.ucl.ac.uk/tasks-track-2017/
2See http://easychair.org/
3See http://ceur-ws.org/


