Second Workshop on Supporting Complex Search Tasks

Nick Belkin
Rutgers
University

Toine Bogers
Aalborg Univ.
Copenhagen

Jaap Kamps
University of
Amsterdam

Diane Kelly
Univ. Tennessee
Knoxville

Marijn Koolen*
Huygens ING
Amsterdam

Emine Yilmaz
University College
London

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.

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,

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*Corresponding organizer.

from exploring and identifying vague information needs, to focusing and refining their needs and search strategies, to finalizing their search. To be able to support exploring and discovering strategies we need to understand the characteristics of different tasks including open-ended, leisure-focused sessions. This is a highly complex problem that touches upon and bridges areas of information seeking, interactive information retrieval, system-centered (ranking, evaluation) and user interface design.

The background for this workshop is derived from the Interactive Track (2014–2016) of the Social Book Search Lab at CLEF [8], which investigates scenarios with complex book search tasks and develops systems and interfaces that support the user through the different stages of their search process. But the aims of the workshop are broader and addresses all aspects of supporting complex search tasks.

2. GOALS AND OBJECTIVES

The overall goal of the workshop is to create and foster an interdisciplinary forum where researchers can exchange and contribute to the development of alternative experiments and prototypes. The main aim is to better understand how to support complex search tasks, addressing many open research questions to be explored, including:

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 stages? What search tactics and search strategies

are effective? How can we promote the use of effective search strategies? How does the information need evolve and what are relevant success criteria for the end result and intermediate steps? How can we cast these as effective complex queries, and how to (interactively) construct such queries?

UI and UX Does the need of complex task and search process management, blending searching, browsing, and recommendations, and supporting exploratory search to sense-making and analytics, make UI and UX design an over-constrained challenge? What affordances are required and in what stage of the search process? How can we make the search process transparent to the user? How and when does the initiative shift between system and user? How can interfaces support various user groups and their special needs?

Evaluation How do we evaluate and compare approaches? How can we design realistic evaluation campaigns for interactive search? Can we carve out one or a range of generic aspects testable on a suitable benchmarks? Is there enough empirical evidence to ground simulated interactive search? What kind of novel retrieval models are needed to combine topical, contextual and preferential aspects?

3. WORKSHOP FORMAT

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

We will start the workshop with a full round of introductions of all participants, making everyone feel welcome and part of the workshop. Then, the workshop continues with two short keynotes to set the stage and ensure all attendees are on the same page. One from an academic perspective, by *Mark Hall (Edge Hill University, UK)*, and one from an industry perspective, by *Jussi Karlgren (Gavagai, Sweden)*.

Next, we will have presentations of contributed papers, with each paper getting a 1-minute boaster and a poster presentation in an interactive poster session. There will be a light-weight submission format where authors can submit short $2 + 1$ page research and position papers, allowing for max. 2 pages of narrative text and an additional page for tables/figures/notes/references. We will allow accepted papers to be extended to four pages in the camera-ready version, so that comments of the reviewers can be implemented in full.

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.

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).

All accepted papers will be published in the workshop proceedings (CEUR-WS). A report of the workshop including a summary of the break-out discussions will be published as a SIGIR Forum report.

4. RELATED WORKSHOPS

This workshop is a follow-up to the first SCST workshop at ECIR 2015 ([5, 6]) and is closely related to the Interactive Track of the CLEF Social Book Search Lab of 2015 and 2016 [7, 8]. 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* [2] and in the spin-off TREC Contextual Suggestion Track [3, 4]; in related discussion within the *SWIRL '12: Strategic Workshop on Information Retrieval in Lorne* [1]; and the *NSF Task-Based Information Search Systems Workshop* [9]. There is a broad research agenda emerging that attracts interest from research in all areas of HCI and IR.

The workshop builds on the results of the earlier discussion, and through the CLEF Social Book Search Lab [10] 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 will provide 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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