



**UvA-DARE (Digital Academic Repository)**

**Second Workshop on Supporting Complex Search Tasks**

Belkin, N.; Bogers, T.; Kamps, J.; Kelly, D.; Koolen, M.; Yilmaz, E.

*Published in:*  
CHIIR'17

*DOI:*  
[10.1145/3020165.3022163](https://doi.org/10.1145/3020165.3022163)

[Link to publication](#)

*Citation for published version (APA):*

Belkin, N., Bogers, T., Kamps, J., Kelly, D., Koolen, M., & Yilmaz, E. (2017). Second Workshop on Supporting Complex Search Tasks. In *CHIIR'17 : proceedings of the 2017 Conference Human Information Interaction and Retrieval : March 7-11, 2017, Oslo, Norway* (pp. 433-435). New York, NY: The Association for Computing Machinery. <https://doi.org/10.1145/3020165.3022163>

**General rights**

It is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), other than for strictly personal, individual use, unless the work is under an open content license (like Creative Commons).

**Disclaimer/Complaints regulations**

If you believe that digital publication of certain material infringes any of your rights or (privacy) interests, please let the Library know, stating your reasons. In case of a legitimate complaint, the Library will make the material inaccessible and/or remove it from the website. Please Ask the Library: <https://uba.uva.nl/en/contact>, or a letter to: Library of the University of Amsterdam, Secretariat, Singel 425, 1012 WP Amsterdam, The Netherlands. You will be contacted as soon as possible.

# 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,

\*Corresponding organizer.

Permission to make digital or hard copies of part or all of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. Copyrights for third-party components of this work must be honored. For all other uses, contact the owner/author(s).

CHIIR '17 March 07-11, 2017, Oslo, Norway

© 2017 Copyright held by the owner/author(s).

ACM ISBN 978-1-4503-4677-1/17/03.

DOI: <http://dx.doi.org/10.1145/3020165.3022163>

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 *workshop* 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 booster 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.<sup>1</sup> 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

<sup>1</sup>Information about the 2017 Tasks Track is available at <http://www.cs.ucl.ac.uk/tasks-track-2017/>

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.

### 5. ACKNOWLEDGMENTS

We thank the CHIIR workshop chair Preben Hansen and the local organizers for their support. We also thank the programme committee members for their timely and constructive reviews.

### REFERENCES

- [1] J. Allan, B. Croft, A. Moffat, and M. Sanderson. Frontiers, Challenges, and Opportunities for Information Retrieval: Report from SWIRL 2012 the Second Strategic Workshop on Information Retrieval in Lorne. *SIGIR Forum*, 46(1):2–32, May 2012.
- [2] N. J. Belkin, C. L. Clarke, N. Gao, J. Kamps, and J. Karlgren. Report on the SIGIR Workshop on “En-

- tain Me”: Supporting Complex Search Tasks. *SIGIR Forum*, 45(2):51–59, Jan. 2012.
- [3] A. Dean-Hall, C. L. A. Clarke, J. Kamps, P. Thomas, and E. M. Voorhees. Overview of the TREC 2012 Contextual Suggestion Track. In E. M. Voorhees and L. P. Buckland, editors, *The Twenty-First Text REtrieval Conference Proceedings (TREC 2012)*. National Institute for Standards and Technology: NIST Special Publication 500-298, 2013.
- [4] A. Dean-Hall, C. L. A. Clarke, J. Kamps, P. Thomas, N. Simon, and E. M. Voorhees. Overview of the TREC 2013 Contextual Suggestion Track. In E. M. Voorhees, editor, *The Twenty-Second Text REtrieval Conference (TREC 2013) Notebook*. National Institute for Standards and Technology: NIST Special Publication 500-302, 2014.
- [5] M. Gäde, M. Hall, H. Huurdeman, J. Kamps, M. Koolen, M. Skov, E. Toms, and D. Walsh, editors. *Proceedings of the first international workshop on Supporting Complex Search Tasks*, volume 1338 of *CEUR Workshop Proceedings*, 2015. CEUR-WS.org. URL <http://ceur-ws.org/Vol-1338>.
- [6] M. Gäde, M. M. Hall, H. C. Huurdeman, J. Kamps, M. Koolen, M. Skov, E. Toms, and D. Walsh. Report on the First Workshop on Supporting Complex Search Tasks. *SIGIR Forum*, 49(1):50–56, 2015.
- [7] M. Gäde, M. M. Hall, H. C. Huurdeman, J. Kamps, M. Koolen, M. Skov, E. Toms, and D. Walsh. Overview of the SBS 2015 Interactive Track. In L. Cappellato, N. Ferro, G. J. F. Jones, and E. SanJuan, editors, *Working Notes of CLEF 2015 - Conference and Labs of the Evaluation forum, Toulouse, France, September 8-11, 2015.*, volume 1391 of *CEUR Workshop Proceedings*. CEUR-WS.org, 2015. URL <http://ceur-ws.org/Vol-1391/78-CR.pdf>.
- [8] M. Gäde, M. M. Hall, H. C. Huurdeman, J. Kamps, M. Koolen, M. Skov, T. Bogers, and D. Walsh. Overview of the SBS 2016 interactive track. In *Working Notes of CLEF 2016 - Conference and Labs of the Evaluation forum, Évora, Portugal, 5-8 September, 2016.*, volume 1609 of *CEUR Workshop Proceedings*, pages 1024–1038. CEUR-WS.org, 2016. URL <http://ceur-ws.org/Vol-1609/16091024.pdf>.
- [9] D. Kelly, J. Arguello, and R. Capra. NSF Workshop on Task-based Information Search Systems. *SIGIR Forum*, 47(2):116–127, Jan. 2013.
- [10] M. Koolen, T. Bogers, M. Gäde, M. M. Hall, I. Hendrickx, H. C. Huurdeman, J. Kamps, M. Skov, S. Verberne, and D. Walsh. Overview of the CLEF 2016 Social Book Search Lab. In *Experimental IR Meets Multilinguality, Multimodality, and Interaction - 7th International Conference of the CLEF Association, CLEF 2016, Évora, Portugal, September 5-8, 2016, Proceedings*, volume 9822 of *Lecture Notes in Computer Science*, pages 351–370. Springer, 2016.