

# SUMMARY SUPPORT FOR SEARCH RESULTS, SESSIONS, and TASKS

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## Introduction

Summarizing information is a key technique in information retrieval. It allows us to convey the gist of an information object in the most concise form possible to users. We observe that much of the work in summarization has focused on individual documents, while broader applications of this technique have been underexplored. Work by Capra & Marchionini [1] and Golovchinsky & Diriye [2] are examples of summarization research that pushes outside the box. Capra & Marchionini [1] applied summarization to document collections, and Golovchinsky and Diriye [2] bootstrapped a summary of the search results to the query box. In our subgroup we explored ways we can apply and extend summarization to different contexts.

## Beyond Document Summarization

Summarization has been studied and applied to documents to construct a one to three sentence surrogate of a document. While approaches in this area have been well explored, we find other novel applications such as search results, search tasks, and sessions to be underexplored yet promising avenues for investigation.

## Search Results

Producing a search result summary would involve processing the search results on the SERP (Search Engine Result Page) and giving a gist of what they, as a set, entail. This can involve providing an overview of the search results on the page, surfacing the common themes and topics on the SERP, and teasing out what documents are similar or different to previous search results.

## Sessions

One level up from search result summaries lie session-level summaries, which involves summarization across multiple SERPs or documents to give users a gist of the information encountered over a period of time. Summarizing information at the session-level can:

- Help searchers get a deeper sense of the content encountered
- Help searchers understand what information is different, similar or substantiate information found in a previous query

## Tasks

Tasks span multiple sessions, and summarization at this level can result in faster task completion time, accelerate knowledge acquisition and, encourage task resumption. Queries, documents, and browser-level actions like pages bookmarked and links clicked, for example, can be used to generate task summaries.

## Research Questions

From our discussion, a number of research questions have been raised, including:

- What makes a good search result/session/task summary?
- How useful are summaries across different tasks?
- How can such summaries be constructed?

## Evaluation

To evaluate summaries for search results, sessions and tasks, a number of metrics can be employed that focus on their quality, utility and usefulness. Low-level metrics like user preference, time-to-click, click-back, relevance judgements, dwelltime, etc. can give us a good idea.

## References

- [1] R. G. Capra and G. Marchionini. 2008. The relation browser tool for faceted exploratory search. In *Proceedings of the 8th ACM/IEEE-CS joint conference on Digital libraries (JCDL '08)*.
- [2] G. Golovchinsky, A. Diriyeh. 2011. Session-based search with Querium. In *Proceedings of the HCIR 2011 Workshop, Mountain View, CA, USA*.