

Review

Modeling and analysis of cross-session search tasks

Kotov A., Bennett P., White R., Dumais S., Teevan J. SIGIR 2011 (Proceedings of the 34th International ACM SIGIR Conference on Research and Development in Information Retrieval, Beijing, China, Jul 24-28, 2011) 5-14, 2011. Type: Proceedings

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Current search engines cannot provide acceptable results for complicated needs that require a user to issue a series of queries in multiple search sessions ("cross-session" in this paper), such as when planning a vacation. Kotov et al. model and analyze the cross-session information needs by identifying all previous queries in a user's search history dedicated to the same task as the current query, and by predicting whether a user will return to the task in future sessions. They formalize these tasks as simple supervised classification tasks, and obtain promising findings that knowledge of previous user queries on the same long-term task enables a search engine to provide support for task resumption. To define the task, they employ both automatic initial labeling and additional human annotation. Then, they label the queries as belonging to the same task if the similarity between term sets of two queries exceeds a threshold. Their proposed approach achieved more than 70 percent accuracy.

The authors employ only two different regression-based classifiers. However, to verify which classifier is effective in this type of task, they also should try other popular classifiers such as support vector machines, maximum entropy, and so on. They analyze important features to construct classifiers obtained by logistic regression in detail. Their findings are helpful cues for researchers who work on user search behavior.

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