Semantic Search for Biological Datasets: A Usability Study on Modes of Querying and Explaining Search Results

Submitted by rene [1] on Tue, 2023-06-13 11:02

- Linked Open Data [2]
- Literature Management [3]
- Semantic Publishing [4]
- Bioinformatics [5]

Title	Semantic Search for Biological Datasets: A Usability Study on Modes of Querying and Explaining Search Results
Publication Type	Conference Paper
Year of Publication	2023
Refereed Designation	Refereed
Authors	Löffler, F. [6], F. Shafiei [7], R. Witte [8], B. König-Ries [9], and F. Klan [10]
Editors	König-Ries, B. [9], S. Scherzinger [11], W. Lehner [12], and G. Vossen [13]
Conference Name	BTW 2023
Publisher	Gesellschaft für Informatik e.V.

Abstract: Dataset discovery is a frequent task in daily research practice, yet studies are missing that explore the usability of user interfaces (UI) in data portals. In particular, very few user studies exist that analyze whether particular elements in the user interface are useful for search tasks. We aim to address those needs for more specific usability evaluations in dataset search. In this work, wepresent a flexible semantic search over biological datasets with two user interfaces. The search result contains semantically related terms, such as synonyms or more specific terms, obtained from domain ontologies. We evaluated the system in a user study with 20 scholars. We focused on two components, the query input to explore a search in categories (entity types) in comparision to a single input field, and we analyzed textual highlightings in the returned datasets to study whether users are distracted by semantic information such as URIs. Our results show that users prefer interfaces with a single input field for search tasks they are not familiar with, and that users appreciate explanations with terminologies and URIs.

URL	https://dl.gi.de/handle/20.500.12116/40364 [14]
DOI	10.18420/BTW2023-56 [15]

[ch-resu](#)

Links:
[1] https://www.semanticsoftware.info/users/rene
[2] https://www.semanticsoftware.info/taxonomy/term/418
[3] https://www.semanticsoftware.info/taxonomy/term/391
[4] https://www.semanticsoftware.info/taxonomy/term/390
[5] https://www.semanticsoftware.info/category/topic/bioinformatics
[6] https://www.semanticsoftware.info/biblio/author/134
[7] https://www.semanticsoftware.info/biblio/author/196
[8] https://www.semanticsoftware.info/biblio/author/1
[9] https://www.semanticsoftware.info/biblio/author/126
[10] https://www.semanticsoftware.info/biblio/author/197
[11] https://www.semanticsoftware.info/biblio/author/198
[12] https://www.semanticsoftware.info/biblio/author/199
[13] https://www.semanticsoftware.info/biblio/author/200
[14] https://dl.gi.de/handle/20.500.12116/40364
[15] http://dx.doi.org/10.18420/BTW2023-56