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Dynamically Responsive Search Result Weblinks

Diego Baron

Judy Mou

Andrew Silverman

Pavan Kuppili

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Dynamically Responsive Search Result Weblinks

ABSTRACT

When a general purpose search engine is used to search dynamic databases, outlinks in the search results page simply point to the relevant databases, without specifying the filtering parameters entered as part of the search query. When the user clicks on a search result and is redirected to the target webpage, the user is forced to re-enter filtering parameters that were already provided as part of the search query. This disclosure describes dynamic search result outlinks where user-provided search parameters are used, with user permission, to automatically fill information in the web page pointed to by the outlink. This ensures a better match between information entered by the user during search and information filled into the target web page, enabling the target web page to directly provide matching results, thus enabling greater convenience and fewer errors. Also described are techniques that enable the generation of dynamic descriptions and snippets based on user-specific query parameters for display in the search results.

KEYWORDS

- Search results
- Results page
- Query parameter
- Page snippet
- Online travel agency (OTA)
- Metasearch
- Dynamic outlink

BACKGROUND

User inputs in structured search fields, or interpretable from an unstructured search query, are a critical part of a search query, but are often ignored when serving results to dynamic websites such as hotel booking sites, online travel aggregators (or agencies, OTAs), meta search engines, etc. Search engines often treat web pages in search results as if they are static prose rather than a tool for enhancing user productivity. Users have to re-enter critical parts of their query for every dynamic website they visit from a search engine.

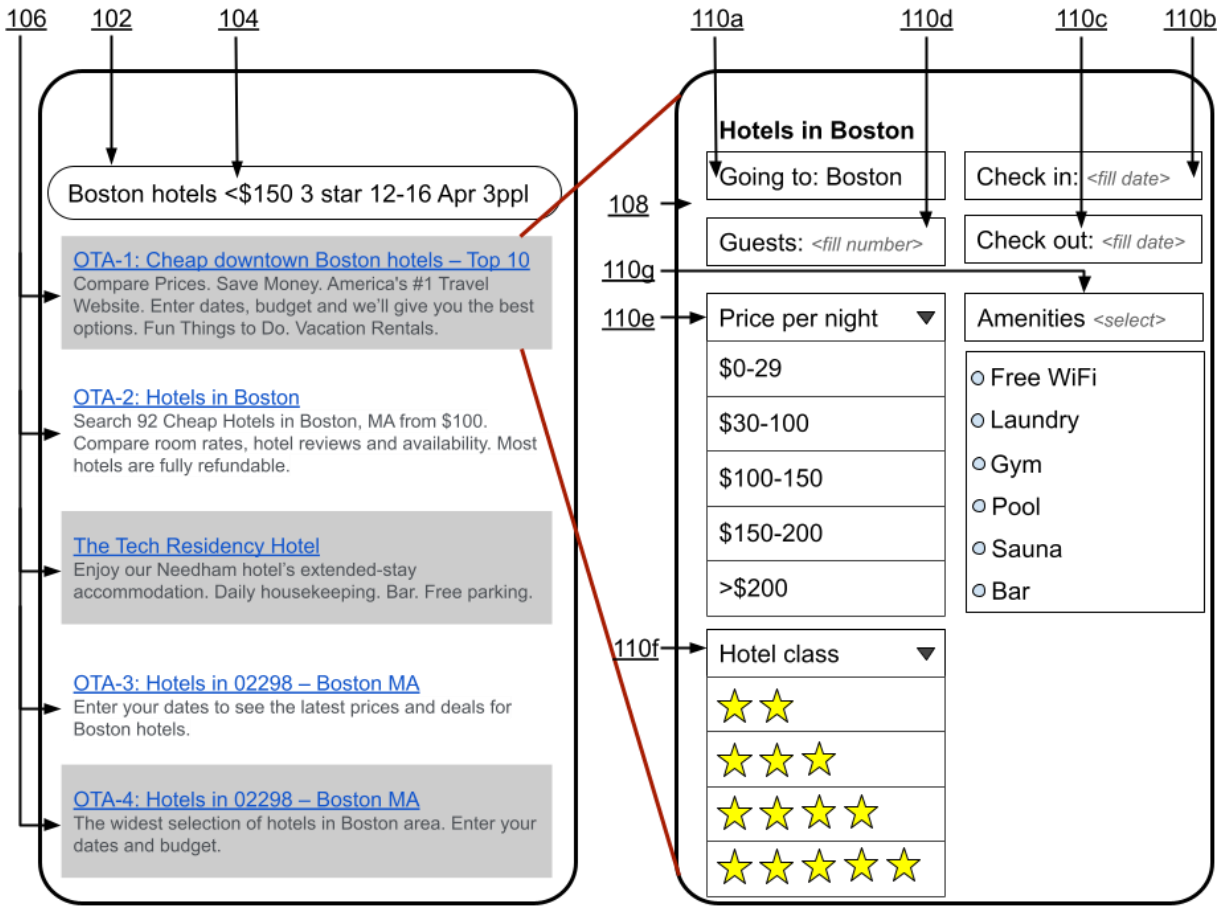

Fig. 1: Parameters of a search phrase can get ignored when user clicks on an outlink

In the example shown in Fig. 1, a user enters a search query (104) in a search box (102) of a general purpose search engine. The search query not only specifies that the user is looking

for hotels in Boston ("Boston hotels") but also that the price per night be less than $150, the hotel be three-star, the date of check-in be 12th April, the date of check-out be 16th April, and that there are three travelers ("3 ppl").

The search engine returns several results (106), which are a mix of online travel aggregators (OTAs) and hotel websites. The user clicks on an OTA outlink to be redirected to the OTA site (108). OTA sites, which are typically dynamic databases, require the specification of travel parameters such as destination (110a), check-in date (110b), check-out date (110c), number of travelers (110d), price per night (110e), hotel class (110f), and amenities (110g). Even though the original search phrase (104) includes several of these parameters, the parameters are not transferred during the transition from the search results to the OTA site. This causes inconvenience as the user has to fill up the form at the OTA site with the same parameters provided during the original search. Not transferring the parameters embedded within a search phrase thus creates hurdles to users on their search journey, especially through dynamic databases.

DESCRIPTION

This disclosure describes outlinks from a search results page that are dynamic. Per the techniques, user-provided search parameters are used to automatically fill information in the web pages pointed to by an outlink. Also described are techniques that enable the insertion of dynamic descriptions and snippets in search results.

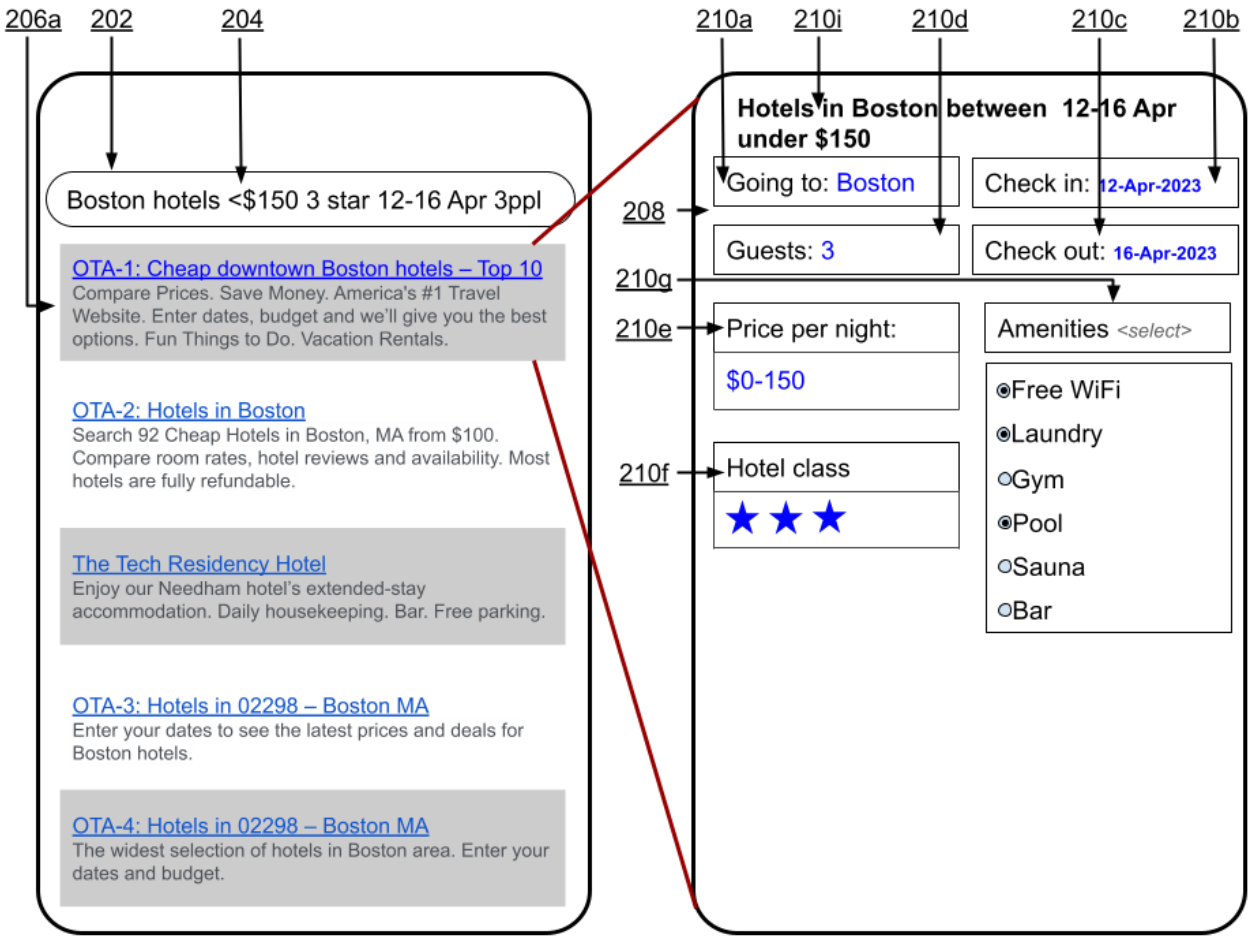

Fig. 2: Dynamically responsive search result weblinks

Fig. 2 illustrates dynamically responsive search result weblinks. When a user enters a search query (204) that includes several parameters into a search box (202) of a general purpose search engine, the resulting search results can include a dynamic outlink (206a, in navy blue). When the dynamic outlink is selected, parameters from the search phrase are automatically filled into the target web page (208).

For example, the fields for destination (210a), check-in date (210b), check-out date (210c), number of guests (210d), price per night (210e), hotel class (210f) are automatically pre-filled (shown in blue) based on parameters implicit in the original search query 204. There are additional fields that the user can fill in manually, e.g., amenities (210g), which are absent from

the original search query. Additionally, the title on the target page (210i) includes parameters from the original search query. Thus, the search engine seamlessly transfers the user's context to the target webpage. Features of dynamic outlinks, as described herein, include:

- Making the blue outlink to web search results pages dynamic, such that parameters in the target page pointed to by the outlink are filled in based on user interactions. This ensures a better match between information entered by the user and information filled into the target web page, resulting in improved user convenience and fewer errors. For example, in the case of a search that provides outlinks to travel websites, parameters such as dates, occupancy, amenities, rate features, etc., that are provided as part of the search query appear as parameters filled into the target web-page. Dynamic outlinks thus provide a better user experience when selecting search results that lead to dynamic database results rather than static pages.
- Making the title text on the target page correspond to user filters and dates such that the user's interactions are reflected.

Dynamic outlinks can be made visually distinctive by using a different shade of blue, e.g., navy blue, indicating that the target webpage has a deeper level of auto-filled information derived from user interactions.

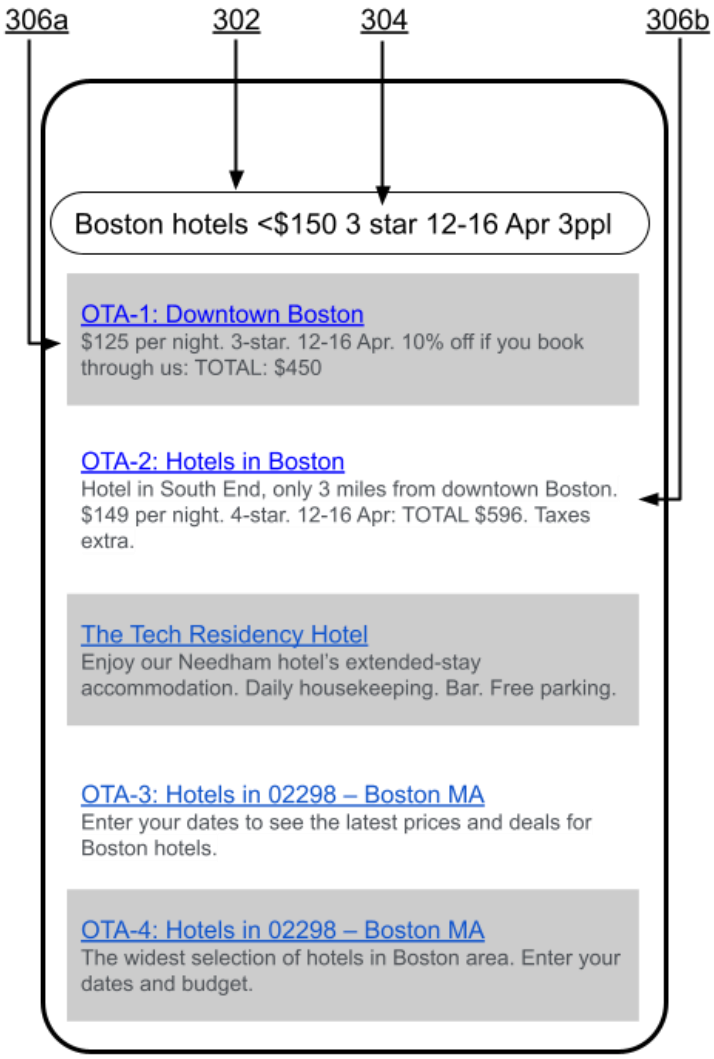

Fig. 3: Dynamic descriptions and snippets in search results

Search results can also include dynamic descriptions and snippets for each dynamic outlink. In the example illustrated in Fig. 3, a search query (304) in a search box (302) for hotels in Boston for three guests between 12-16 April at less than $150 per night results in dynamic links (distinguished from other results by their different shade of blue) that have descriptions and snippets that correspond to the user query. In contrast to a conventional search result display that invites the user to click through and manually fill parameters, the first search result (306a) accounts for user requirements as specified in the search query (less than $150 per night, three

guests, travel between 12-16 April) and includes a possible match at a total, up-to-date cost of $450 in the snippet for the outlink. Similarly, the second search result (306b) accounts for user requirements to include a possible match at a total, up-to-date cost of $596. The user thus receives useful information on the search result page itself, without having to click the outlink to reach the OTA website.

Features of dynamic descriptions and snippets in search results include:

- Merging data in structured feeds with the crawled web index. For example, the data source for the hotel booking module can be used to update web results.
- Drawing from cached data to provide real-time information within the website title, description, or snippets.

Dynamic search result descriptions can be made available for any website integrated with structured feeds, e.g., with real time access to partner databases for the latest availability and pricing; with deep links that carry user state from the search engine to the partner; etc. Both dynamic outlinks and the use of dynamic metadata to supplement cached data, as described herein, make search results more responsive to user queries and inputs.

The search engine is implemented with user configurable settings regarding whether and how parameters from user provided queries can be provided to third-parties for the features described herein. For example, the user may choose to enable deep integration with specific third-parties (e.g., a particular travel website, hotel chain, etc.), for specific categories (e.g., for travel and entertainment, but not for health), etc. The user can change the settings at any time. Information derived from user queries is used in accordance with the user settings and the user is provided with options to disable the described techniques. Further, third-parties that receive query parameters are selected such that they are in compliance with terms that are within user-

specified settings for the search engine, e.g., whether the parameters can be stored, how the parameters can be used, etc.

Further to the descriptions above, a user may be provided with controls allowing the user to make an election as to both if and when systems, programs, or features described herein may enable the collection of user information (e.g., information about a user's search queries, a user's preferences, or a user's current location), and if the user is sent content or communications from a server. In addition, certain data may be treated in one or more ways before it is stored or used so that personally identifiable information is removed. For example, a user's identity may be treated so that no personally identifiable information can be determined for the user, or a user's geographic location may be generalized where location information is obtained (such as to a city, ZIP code, or state level) so that a particular location of a user cannot be determined. Thus, the user may have control over what information is collected about the user, how that information is used, and what information is provided to the user.

CONCLUSION

This disclosure describes dynamic search result outlinks where user-provided search parameters are used, with user permission, to automatically fill information in the web page pointed to by the outlink. This ensures a better match between information entered by the user during search and information filled into the target web page, enabling the target web page to directly provide matching results, thus enabling greater convenience and fewer errors. Also described are techniques that enable the generation of dynamic descriptions and snippets based on user-specific query parameters for display in the search results.

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