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December 19, 2018

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Stephen Hsu

Eric J. Kolb

Steven T. Dieter

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Recommended Citation

Hsu, Stephen; Kolb, Eric J.; and Dieter, Steven T., "Conversion detection for improved online ad selection", Technical Disclosure Commons, (December 19, 2018)

https://www.tdcommons.org/dpubs_series/1792



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Conversion detection for improved online ad selection

ABSTRACT

Online ads sometimes continue unchanged even after the ad had resulted in a conversion, e.g., after a user has purchased the advertised product. Many users find such continued presence of the ad annoying. Also, not refreshing the ad with a different product represents lost revenue for the website publisher and the ad network.

This disclosure describes techniques to detect if the user has purchased a given product by analyzing, with user consent and permission, user data such as emails and other data. Upon detecting conversion, display of ads relating to the product or similar products is discontinued.

KEYWORDS

- online advertising
- customer conversion
- ad conversion
- ad network
- ad selection

BACKGROUND

Online ads are based in part on user interests, e.g., interest in a specific item or classes of items, that are determined with user-permitted information, e.g., browsing history, user profile, etc. Online ads sometimes continue unchanged even after the ad had resulted in a conversion, e.g., after a user has purchased the advertised product. Many users find such continued presence of the ad annoying. Also, not refreshing the ad with a different product represents lost revenue for the website publisher and the ad network.

DESCRIPTION

This disclosure describes techniques to detect ad conversions, and to select user-appropriate ads.

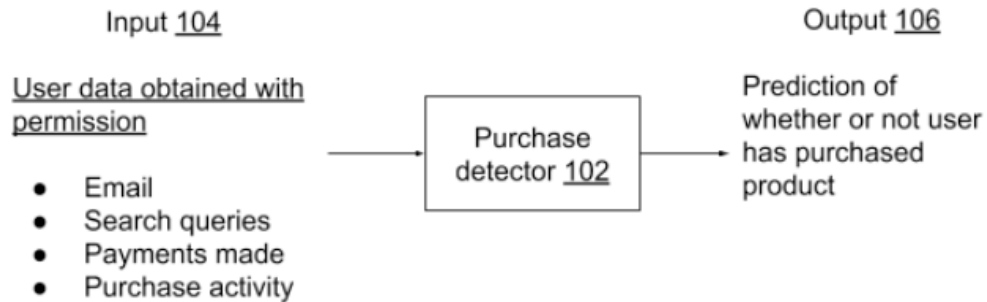


Fig. 1: Detecting purchases made by a user

Per the techniques, a purchase detector (102) (e.g., implemented as a software module) accepts as input (104) user data including one or more user-permitted factors, e.g., email, search queries, payments made, purchase activity, etc. The purchase detector produces as output (106) a prediction of whether the user has purchased a particular product.

The purchase detector is built using several techniques for analyzing the input factors. The user data is analyzed with these techniques only when permitted by the user. The user is provided with options to restrict access to one or more portions of user data, including denying data access entirely, and to turn off the analysis. The techniques can include one or more of the following:

- Email is analyzed, with user permission, to identify email communication between a vendor and the user. When permitted, content of such emails is analyzed to detect product names, purchase or shipping confirmation messages, etc.

- Search queries are analyzed, with user permission, to detect phrases that pertain to products. For example, if a drop-off in queries related to a particular product is detected such drop-off is an indication that the user has purchased the product.
- Payments can be analyzed, with user permission, to detect purchases made by the user. For example, payments can be detected based on user activity in a payment app, from an account statement, from communications (e.g., alerts) received by a user device, etc.
- Purchase activity is detected, with user permission, within e-commerce apps or websites visited using a browser application.

Predictions generated by the purchase detector are used by an ad network (e.g., that places ads in publisher websites, apps, etc.) to determine the ad to be displayed to the user. For example, if the purchase detector indicates with high confidence that the user has recently purchased a particular product, ads for that product and similar products are not shown. In this manner, the techniques of this disclosure provide a better user experience by disabling advertisements deemed to not be of interest to the user, and improve utilization of ad space in a manner that benefits other stakeholders such as the advertiser, the website or app publisher, the ad network, etc.

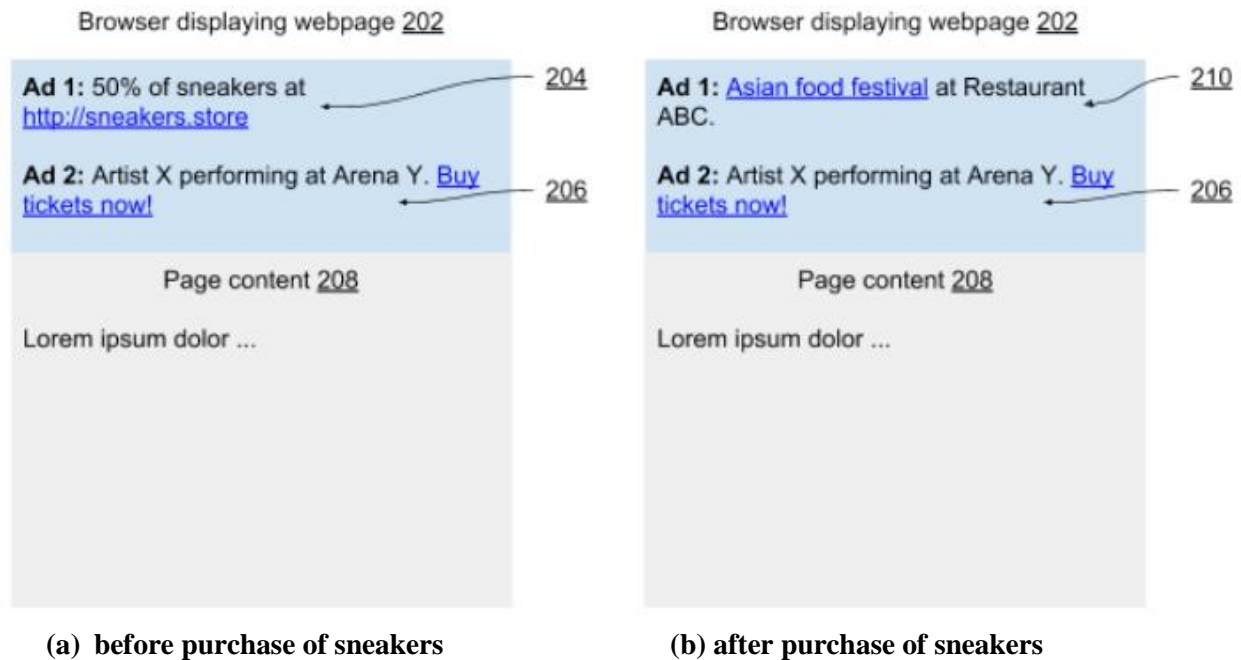


Fig. 2: Advertisement selection based on user purchases

Fig. 2(a) illustrates a browser (202) that displays a webpage with page content (208). Two advertisements (204, 206) are inserted on the webpage. As illustrated in Fig. 2(a), ad 1 (204) is related to sneakers available at an online store. At a subsequent time, e.g., when the page is reloaded, or another page is loaded, the ad network detects, using techniques of this disclosure that the user has purchased sneakers. As illustrated in Fig. 2(b), the sneaker ad (204) is no longer shown to the user. Instead, a different ad (210) is included on the webpage. While this example relates to advertisements on a webpage, the techniques can be applied to other types of ads, e.g., ads in mobile apps or other software, and to advertisements of different types, e.g., display ads, banner ads, 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 collection of user information (e.g., information about a user's social network, social

actions or activities, profession, 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 techniques to detect if the user has purchased a given product by analyzing, with user consent and permission, user data such as emails and other data. Upon detecting conversion, display of ads relating to the product or similar products is discontinued.