Technical Disclosure Commons

October 17, 2018

Transfer of User Interests and Preferences Between Software Platforms

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Recommended Citation

N/A, "Transfer of User Interests and Preferences Between Software Platforms", Technical Disclosure Commons, (October 17, 2018)
https://www.tdcommons.org/dpubs_series/1603

Transfer of user interests and preferences between software platforms

ABSTRACT

User data, such as page views, app installation/usage data, etc. is not easily available on some mobile device platforms. This paucity of data makes determination of interests and preferences of users of such platforms difficult, e.g., for advertisers. With user permission, this disclosure uses machine-learning techniques to find features that indicate user interests and preferences on one platform, and transfer them to another.

KEYWORDS

- online advertising
- user interests
- porting
- user preferences
- software platform
- user profile
- mobile OS

BACKGROUND

User data, such as page views, app installation/usage data, etc. is not easily available on some mobile device platforms. This paucity of data makes determination of interests and preferences of users of such platforms difficult, e.g., for advertisers. The resulting quality, coverage, and relevance of content on such platforms are generally poorer than platforms that provide user data.

DESCRIPTION

Techniques described herein enable the transfer of long-term user interests and preferences across different software or mobile-device platforms.
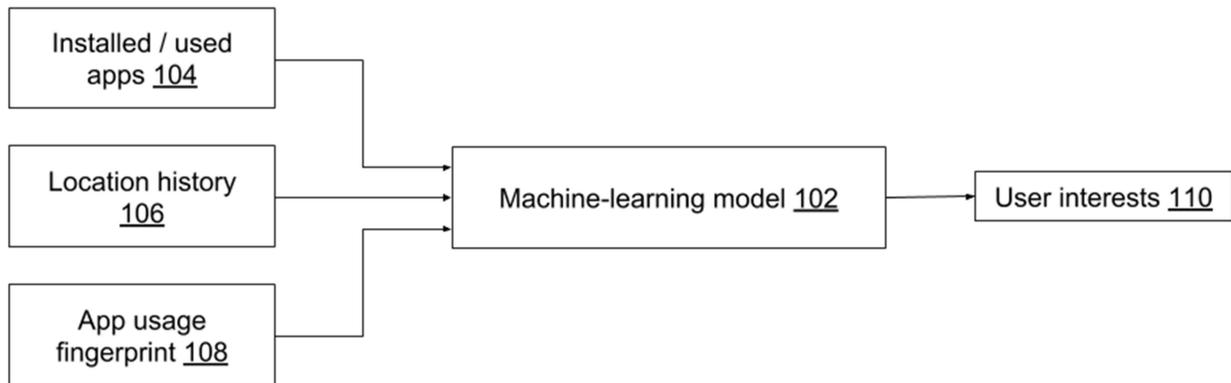

Fig. 1: Predicting user interests across platforms

Fig. 1 illustrates prediction of long-term user interests and preferences to enable transfer across mobile-device platforms. With user permission, a machine-learning model (102) trains on user features that are likely to be common across the platforms, e.g., user-installed or used applications (104), user location history (106), user app-usage data (108), etc. Only such data as permitted by the user is used to train the machine-learning model. Signals of these user features, trained on one mobile-device platform can be used to predict long-term user interests (110) on another mobile-device platform. Long-term user interests and preferences on a mobile platform have various applications, e.g., ad targeting, interface customization, etc.

The machine-learning model can be implemented as a multi-layer neural network, e.g., a long short-term memory (LSTM) neural network. Other types of models, e.g., recurrent neural networks, convolutional neural networks, and techniques such as support vector machines, random forests, boosted decision trees, etc., can also be used to implement the model.

In this manner, the techniques of this disclosure enable the transfer of long-term user interests and preferences between devices running different operating systems or platforms.

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

User data, such as page views, app installation/usage data, etc. is not easily available on some mobile device platforms. This paucity of data makes determination of interests and preferences of users of such platforms difficult, e.g., for advertisers. With user permission, this disclosure uses machine-learning techniques to find features that indicate user interests and preferences on one platform, and transfer them to another.