Advertisement Conversion Detection via Time-Base Geolocation

Indusekar Ponnapa Reddy

Lakshmi Dabbiru

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“Conversions” is a term frequently used to refer to instances when a customer or potential customer takes a desired action after viewing an advertisement, such as visiting a store, purchasing a product, downloading an app, or other such actions. When the customer takes the action after viewing the advertisement, it may be counted as a conversion. As conversions represent desired behavior or interactions, advertisers want to maximize conversions. Data gathering about successful conversion events is useful from an analytics perspective, in order to identify successful advertising campaigns.

With the rise of social media and video hosting sites such as YouTube, entertainment advertising such as movie trailers may have large numbers of potential viewers or potential conversion events. However, as movies are typically seen some significant amount of time after viewing a movie trailer, it may be difficult to track conversions that resulted from a viewing event.

The systems and methods described herein provide for attribution of conversions based on time-based geolocation information. Although primarily discussed in terms of movies, these methods and systems may be applied to other categories and events with determined locations and times, such as theater events, concerts, restaurants with particular timed reservations, night clubs, etc. – i.e. any category of event, attraction, service, or other entity in which visiting a location at a particular time has significance.

To track conversions, geolocation information of a device associated with a customer may be tracked over time. A time-based geolocation path history may be
tracked back from a visit to an attraction or event until finding a corresponding advertisement viewing opportunity to which the visitation may be attributed.

Furthermore, to provide privacy, individual user or device information need not be directly tracked, but rather, this information may be aggregated. A location server may identify locations of user devices by time. Upon identifying an event with a corresponding time and location (e.g., a movie showing at a particular theater), a set of devices present at the event may be identified as a first set. A second set of users to whom a corresponding trailer was provided may be identified, e.g., based on cookies or device identification or audience measurement. An intersection of the two sets may be generated to identify a population of users that watched a trailer and visited the movie showing, and which may be counted as conversions.

To protect user privacy and provide transparency of data collection, these systems may only be used in instances where users have explicitly agreed to participate, such as audience measurement panels or similar groups. In many implementations, demographic information about users utilized for alternate content selection may be anonymized or disambiguated to protect the privacy of the device user. In many such implementations or similar situations in which personal information about the user of a client device may be collected for measurement or used to select third-party content, the user may be provided with an opportunity to control whether programs or features that may collect personal information (e.g., information about a user’s social network, social actions or activities, a user’s preferences, or a user’s current location) do so, or an opportunity to control whether or how to transmit measurement data to an audience measurement server and/or panel provider. In addition, certain data may be treated in one or more ways
before it is stored or used by an audience measurement server, so that personally
identifiable information is removed when generating parameters (e.g., demographic
parameters). In some implementations, a user’s identity may be anonymized 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 how information is collected about him or her and used by
the measurement server, panel provider server, and content providers.

Accordingly, these systems provide aggregated, anonymized tracking of
conversion events through time-based geolocation information and histories.
Abstract

The systems and methods described herein provide for attribution of conversions based on time-based geolocation information. Although primarily discussed in terms of movies, these methods and systems may be applied to other categories and events with determined locations and times, such as theater events, concerts, restaurants with particular timed reservations, night clubs, etc. – i.e. any category of event, attraction, service, or other entity in which visiting a location at a particular time has significance.