Method Of Ranking Videos During A Search

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METHOD OF RANKING VIDEOS DURING A SEARCH

ABSTRACT

A system and method are disclosed that rank videos on a website of a service provider during a user search. The method includes an algorithm for ranking the content based on criteria such as session length, video watch time within a session, video completion and number of unique videos uploaded by the same creator. The algorithm determines if a video has an increased or a decreased ranking based on an aggregate of the criteria. The method involves calculating each of these elements to generate a total score across a cluster of sessions or a specific session, for each video. The system then presents the videos to the user based on their aggregate ranking. The disclosed method reduces server-side CPU cycles and network traffic, as well as client-side battery expenditure and network traffic, by efficiently identifying which content a user will be satisfied with watching.

BACKGROUND

Generally, when users search for media content (especially video content), the mission is to find long-form content to watch and fill their session. When users inefficiently search for media content (especially video content) to watch, they create more search and browse queries which require extra network traffic, memory, and server CPU cycles for search ranking. During this process, the users may also sample a number of videos that do not satisfy their needs. This extraneous video streaming incurs additional precious network traffic and battery life from the user devices. Therefore, there is a need for new models that enable users to more efficiently find content.

DESCRIPTION

A system and method are disclosed that rank content on the web during a user search.
The system includes a user interacting with a cloud-based server to view broadcast videos. The method includes an algorithm for ranking the content based on several criteria as depicted in FIG. 1. The algorithm considers the following criteria: the first is a) session length, which determines the quantity of monetized watch time for a particular session when compared to all sessions. The second parameter b) video watch time within a session, determines quantity of monetized watch time of a creator’s videos within a particular session. c) Video completion takes into account determination of the degree to which users complete the videos that they watch compared to other videos in the same session. d) The number of unique videos is a determination of the number of unique videos in a single session, uploaded by the same content creator.

The algorithm determines if a video has an increased or a decreased ranking based on an
aggregate of the criteria. The method involves calculating each of these elements to generate a total score across a cluster of sessions or a specific session, and then a specific score for a specific session or a specific view for each video. The system then presents videos to users based on their aggregate ranking.

For example, the session length is calculated for the total amount of monetizable watch time included in all sessions within a particular monetizable cluster. Then the session length for a particular session is compared to the total session length of the monetizable session clusters. A session with 10 minutes of monetizable watchtime within a cluster with 100 minutes of total watchtime is thus assigned a score of 10%. This score is then applied to a formula to identify an adjusted score. This formula primarily consists of a polynomial function where the score is taken to the power of X, where X is a floating point number near 1. X might be 1.2. A session with 10 minutes of watchtime in a cluster of 100 minutes is thus assigned a final score of \(0.1^{1.2} = 0.063\), while a session with 20 minutes of watchtime within the same cluster has a final score of 0.144.

Once the final score for each session is calculated, the revenue is distributed amongst the sessions based on the relative value of their scores and the sum of the final scores of all sessions within the monetizable session cluster.

The method of ranking of videos based on a function of session length as described above, values sessions that are longer and therefore content-creators that attract users with longer sessions. This criterion is convenient because it does not discriminate between creators who cause longer monetizable session lengths due to having longer form content or from having many short videos since the total watch time of all of that creator’s videos is considered.

In case of total watch time, calculating the score for two 5-minute videos in a 50-minute session independently results in a score that is 15% lower than calculating the score of the 10
minutes of total watch time assuming an X factor of 1.2. \(0.2^{1.2} / (0.1^{1.2} \times 2) = 1.15\). Valuing the % of watch time in a session of a particular creator, values creators who create cohesive experiences that bring the user back to the site rather than short independent content that relies on recommendations from a heuristics service provider. This is especially true when measuring watch time in longer sessions (such as weekly or monthly) as content creators who have content spanning multiple visits are valued higher than content creators who show up in only a single visit. The other three criteria follow the same logic, except instead of distributing revenue to each session within a cluster of sessions, these models distribute revenue to each content creator whose videos are part of a single session. It is important for all of these calculations that the creator’s watch time is accumulated across all of his videos in a session instead of each video independently based on the nature of how the score is calculated.

Video completion, number of unique videos and maximum runtime can be scored in a specific user session in the same fashion as total watch time. The system and method is applicable in search ads, display ads, and in-app monetization.

The disclosed method reduces server-side CPU cycles and network traffic, as well as client-side battery life expenditure and network traffic, by efficiently identifying which content a user will be satisfied with watching. The method also calculates modifiers based on watchtime and engagement that skew search and recommendation heuristics such that the algorithms more accurately identify the content which will satisfy the user for a more complete portion of the user’s session. This leads to less time spent searching for new content to watch and more time watching content he enjoys, thereby improving user experience. Valuing the percentage of watch time in a session that a particular creator is responsible for, values creators who create cohesive experiences. This brings the user back to the site rather than short independent content that relies
on recommendations from the service provider.