Technical Disclosure Commons

March 2021

Withholding Content and Recommendation Delivery to Avoid Spoilers

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ABSTRACT

Online news portals, personalized feeds, etc. can include content spoilers that can ruin a user's online experience by revealing details of the plot of content such as television shows, movies, etc. This disclosure describes techniques to avoid spoilers by delaying the presentation of material pertaining to various types of content until a user has consumed the content. With user permission, a user's content consumption history is accessed and utilized to identify news articles and other media that can be a content spoiler. Analysis of articles and other media can be performed using machine learning models or other suitable techniques to determine whether a particular article is a content spoiler for content that the user is interested in.

KEYWORDS

- Media content
- TV show
- Latest episode
- Spoiler
- Online news
- Content recommendation
- Content discovery
- Content filtering
- Content withholding

BACKGROUND

News sources and other websites routines feature articles cover recently broadcast media content, such as TV shows, movies, sporting events, etc. Such articles and corresponding headlines and snippets often include details and outcomes of the media content, e.g., the plot of a movie or TV series. Therefore, reading such articles or the associated headlines or snippets prior to viewing the corresponding media content can be a spoiler.

Yet, content aggregation or recommendation applications, such as news portals, present such material to users without taking into account whether they have already viewed the content covered in the material. Since such applications are often personalized to a user's interests (obtained with user permission), the material presented is highly likely to pertain to media content of the user's interest. In addition, many applications include explicit mechanisms for users to specify their interests, including specific types of media content and related topics, such as characters, persons, etc.

When viewing online content, users place high importance on accuracy and timeliness of personalized material. However, in the case of recently broadcast media content, high accuracy and timeliness can lead to users being unhappy if the material shown spoils the content for them before they have had the chance to view it.

DESCRIPTION

This disclosure describes techniques for applications to avoid content spoilers by delaying presentation of material pertaining to various types of content of a user's interest until the user has consumed the content. With user permission, the status of a user's content consumption and related preferences and practices can be obtained from one or more relevant sources, such as content delivery applications/platforms such as audio/video streaming services, search and browsing history, device usage, etc. Such user information is accessed with specific user permission and is utilized for the specific purpose of content filtering, as described herein. Users can limit or deny access to user information and/or turn off the feature entirely.

For instance, a user interested in a particular TV series is not shown articles or other content related to the episodes of that series that the user has not yet watched. For example, consider the case that a user is unable to watch the latest episode of a TV series that airs (or

becomes available on a streaming platform) on a Monday. After the episode is available, online content containing plot description, viewer reactions, critic analyses, etc. routinely becomes available within a short time. In such a case, with the user's permission, online material connected to the latest episode is withheld from the user until the user is determined to have watched the episode, e.g., over the weekend. Once the user has watched the episode, the material that was withheld during the week is included within the user's feed in the relevant applications, such as news portals, content discovery panels, etc. or otherwise made available to the user.
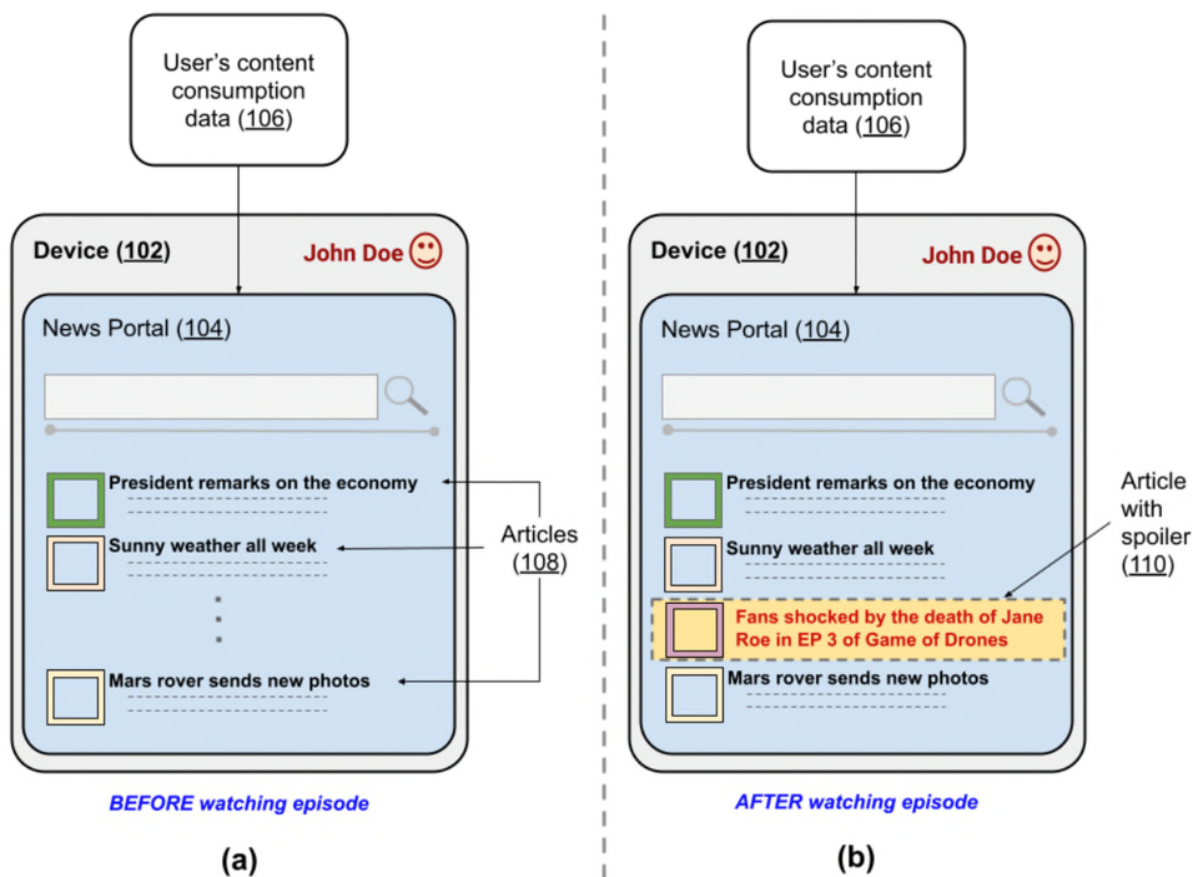
Fig. 1: Personalized filtering to remove content spoilers

Fig. 1 shows an example of operational implementation of the content filtering techniques described in this disclosure. As shown in Fig. 1(a), a user (John Doe) views news

articles (108) via a news portal (104) accessed using a device (102). The user's content consumption preferences and history (106), obtained with permission, indicates that the user has not yet watched the season finale of a TV series that the user has been watching all season. Therefore, the content of the news portal (e.g., a news article feed) is filtered prior to being shown to the user to avoid spoilers by omitting content related to the recently aired season finale that the user has not watched. After the content consumption data indicates that the user has finished watching the season finale, the filtered news content that includes spoilers (110) that was previously withheld from the user's view of the news portal is included in the news feed, as shown in Fig. 1(b).

Content filtering can be performed by taking into account relevant metadata, such as closed captions for the content, automated recognition of speech contained within the content, user-generated content (e.g., reaction videos) in response to original content, etc. Filtering can be performed using any suitable automated technique, e.g., trained machine learning models. If the user permits, the filtering models can be further enhanced by customizing such models to identify material that includes spoilers related to content of specific interest to the user.

With user permission, the techniques can be applied to a variety of content types, such as books, video games, etc. For example, certain material can be withheld from being shown to the user until the user progresses through the corresponding book chapter, game level, etc. With user permission, finishing a book chapter or progressing past a given level within a game can be used to unlock related material, such as related news coverage, content recommendations, etc.

The described techniques can be implemented within any application, platform, service, or device that is utilized to show information or provide suggestions that relate to a user's content consumption, such as news portals, media aggregators, content streaming platforms, etc.

For example, with user permission, the user interface (UI) of a network-connected TV application or device can show episode titles and descriptions only after the user has completed watching the episode. Implementation of the described techniques can prevent accidental spoilers caused by content aggregators and recommendation engines, thus avoiding negative impact because of such experiences.

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 content viewing history or a user's preferences), 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. 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

Online news portals, personalized feeds, etc. can include content spoilers that can ruin a user's online experience by revealing details of the plot of content such as television shows, movies, etc. This disclosure describes techniques to avoid spoilers by delaying the presentation of material pertaining to various types of content until a user has consumed the content. With user permission, a user's content consumption history is accessed and utilized to identify news articles and other media that can be a content spoiler. Analysis of articles and other media can be performed using machine learning models or other suitable techniques to determine whether a particular article is a content spoiler for content that the user is interested in.