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Displaying advertisements in video clips

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Displaying advertisements in video clips

ABSTRACT

On video-sharing platforms, users access some video clips primarily for audio rather than video content. In such video clips, the display is idle or otherwise possibly uninteresting to the viewer. The techniques of this disclosure apply machine learning to detect if the visual portion of a video clip is likely not of interest to the user. If the visual portion detected to not be of interest to the user, permission is sought from the user to insert a visual ad into the clip while audio continues playing unchanged. If user permission is obtained, ads are inserted in portions of video clips identified as not being of interest to the user, thereby monetizing the video clip.

KEYWORDS

- video hosting
- display advertising
- video advertising
- video clips
- video summarization
- interest detection
- video classification

BACKGROUND

On video-sharing platforms, users access some video clips primarily for audio rather than video content. For example, some video clips play music or other audio without displaying video content, e.g., by displaying a mostly static image or a blank image. In such video clips, the display is idle or otherwise potentially uninteresting to the viewer, and is potentially suitable to monetization.

DESCRIPTION

Techniques described herein use machine learning to predict whether the visual portion of a video clip is of interest to the viewer of the clip. If the prediction is that the visual portion is not of interest to the user, then with user permission, an advertisement is displayed while playing the audio portion unchanged. By replacing the video content determined as not likely of interest with an advertisement, the unused video resources of the clip are monetized.

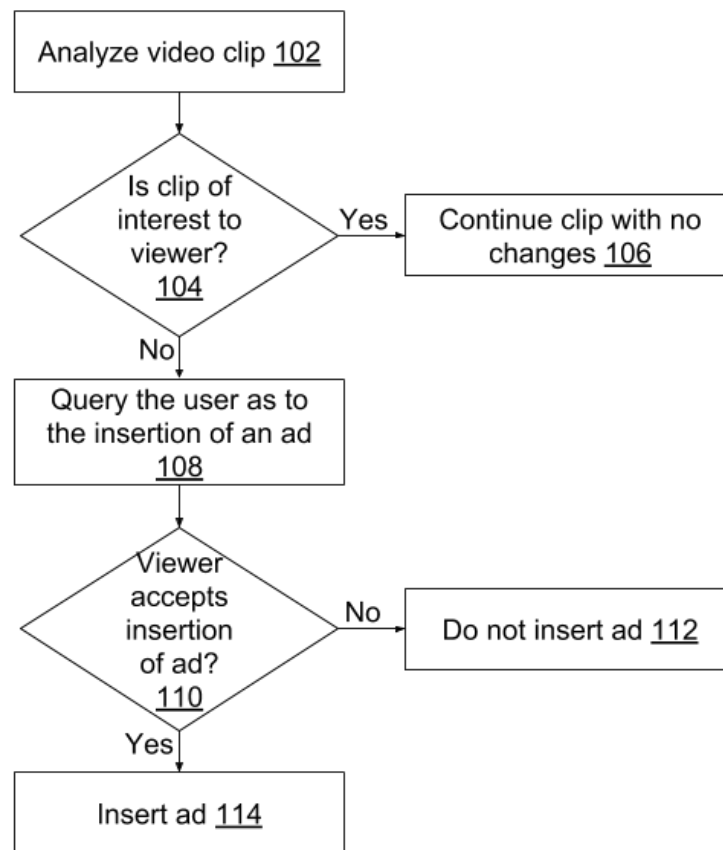


Fig. 1: Displaying ads in portions of video clips

Fig. 1 illustrates an example process to display of ads in portions of video clips that are detected as not being of interest to a viewer. A video clip being displayed to a viewer is analyzed (102) to detect if the clip (or portion thereof) is of interest to the viewer (104). For example,

machine-learning models are employed to analyze the video clip to predict user interest or lack thereof.

If the visual portion of the video clip is detected as likely to be of user interest (e.g., includes dynamic content), then the clip continues playing with no changes (106). If the visual portion of the video clip is detected as not likely of user interest, user permission is sought to display a visual ad (108) while the audio from the video clip continues playing.

If the user permits the insertion of advertising (110), an ad is displayed (114) while the audio continues playing unchanged. If the user does not permit ad insertion, then ads are not inserted (112) and the video clip continues playing unchanged. In this manner, portions of video clips detected as not of interest to the viewer can be monetized, even as the user is alerted about advertising that may be shown while audio is playing. Users are presented with the option of accepting or rejecting the insertion of advertisements, e.g., prior to display of an advertisement. Users are presented with options to stop display of advertising at any time.

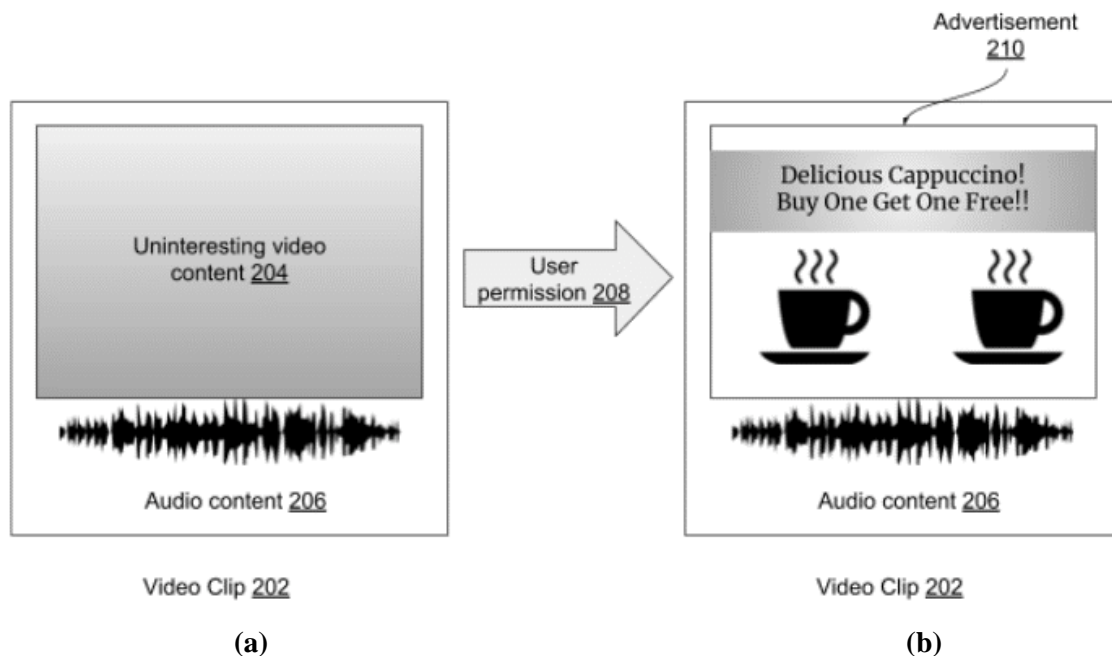


Fig. 2: Displaying ads in portions of video clips

Fig. 2 illustrates an example of replacing video content with advertising upon user permission. As shown in Fig. 2(a), a user starts playback of a video clip (202) that includes uninteresting video content (204) and audio content (206). Upon detecting that the video content is likely not of interest, user permission (208) is obtained to display advertising in place of the video portion of the video clip. As illustrated in Fig. 2(b), an advertisement (210) is inserted in place of the video content as playback of the audio content continues.

Further, the audio content of the video clip may be analyzed, e.g., using speech-to-text tools, to identify and display visual ads relevant to the target audience determined based on the audio content. Anonymized aggregate browsing activity of the audience of a particular clip is analyzed to determine audience interests. Determining the interests of an audience has various applications, e.g., delivering relevant ads, suggested content, 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

On video-sharing platforms, users access some video clips primarily for audio rather than video content. In such video clips, the display is idle or otherwise possibly uninteresting to the viewer. The techniques of this disclosure apply machine learning to detect if the visual portion of a video clip is likely not of interest to the user. If the visual portion detected to not be of interest to the user, permission is sought from the user to insert a visual ad into the clip while audio continues playing unchanged. If user permission is obtained, ads are inserted in portions of video clips identified as not being of interest to the user, thereby monetizing the video clip.