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## Patent Public Search | Text View

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United States Patent Application Publication

20250265619

Kind Code

A1

Publication Date

August 21, 2025

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## SYSTEMS AND METHODS TO IMPROVE PRESENTATION OF ADVERTISEMENTS

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### Abstract

Systems and methods are provided for generating an advertisement for output based on an item on a wish list. A request to obtain media content is received at a computing device, and a user profiled associated with the media content is identified. A wish list associated with the user profile is accessed, and an item on the wish list is identified. A first advertisement is identified, wherein the first advertisement is based on the identified item. A representation of the first advertisement and the media content are received at the computing device. A representation of the first advertisement and the media content are generated for output at the computing device.

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**Family ID:** 1000008575038

**Appl. No.:** 18/930767

**Filed:** October 29, 2024

### Related U.S. Application Data

parent US continuation 17479764 20210920 parent-grant-document US 12190355 child US 18930767

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### Publication Classification

**Int. Cl.:** G06Q30/0251 (20230101); G06Q30/0601 (20230101); G06Q50/00 (20240101)

**U.S. Cl.:**

## Background/Summary

CROSS-REFERENCE TO RELATED APPLICATION(S) [0001] This application is a continuation of U.S. patent application Ser. No. 17/479,764, filed on Sep. 20, 2021, the disclosure of which is hereby incorporated by reference herein in its entirety.

### BACKGROUND

[0002] The present disclosure is directed towards systems and methods for generating an advertisement for output. In particular, systems and methods are provided herein that for generating an advertisement for output based on an item on a wish list.

### SUMMARY

[0003] The proliferation of e-commerce sites, such as Amazon, has given rise to new approaches to shopping that utilize the connected nature of e-commerce sites. In particular, a user may add items to a wish list, and a user may share that wish list with, for example, their friends, family and/or colleagues to indicate items that they would like as gifts. For example, a user may share a wish list with family and friends in the run-up to a special event, such as a birthday. However, even if a user shares a wish list with family and friends, the family and friends may not be aware of the best place to purchase an item from the wish list. For example, if the wish list is associated with a particular e-commerce site, they may not be aware of sales and/or similar items that are available on other e-commerce sites. In another example, a user may have been sent the wish list but, for example, if the wish list was sent too far in advance of the event, the user may forget about the event. In another example, a user may have created a wish list but may be hesitant about sharing the wish list directly with friends, family and colleagues.

[0004] In view of the foregoing, it would be beneficial to have a system that is capable of generating an advertisement for output based on an item on a wish list.

[0005] Systems and methods are described herein for generating an advertisement for output based on an item on a wish list. In accordance with a first aspect of the disclosure, a method is provided for generating an advertisement for output based on an item on a wish list. The method includes receiving a request to obtain, at a computing device, media content and identifying a user profile associated with the media content. A wish list associated with the user profile is accessed, and an item on the wish list is identified. A first advertisement is identified, wherein the first advertisement is based on the identified item. A representation of the first advertisement and the media content are received at the computing device. The representation of the first advertisement and the media content are generated for output at the computing device. Accessing the wish list may further comprise accessing the wish list via an advertising exchange. Identifying the item on the wish list may further comprise identifying the item at the advertising exchange. Identifying the first advertisement may further comprise identifying the first advertisement based on a pre-cached bid. In an example system, a user may log on to an online video sharing platform, such as YouTube, via a tablet device. The user may select a video to watch. When the user selects a video to watch, a wish list associated with the user profile is accessed. For example, the user may have connected an e-commerce account to their account for the online video sharing platform and a wish list associated with the e-commerce account may be accessed. An item on the wish list is identified. This may comprise a general identification, such as identifying that a hairdryer is present on the wish list. In another example, this may comprise a specific identification, such as identifying the brand and model of a hairdryer on the wish list. An advertisement is identified based on the identified item, for example an advertisement directed towards the specific hairdryer on the wish

list. In some examples, this advertisement is accessed via an advertising exchange. The advertisement and the selected media content are received at the tablet device, and a representation of the first advertisement is generated for output. For example, a first frame of the advertisement may be generated for output at the tablet device. In some examples, the entire advertisement may be generated for output and automatically output to the user before the media content is generated for output and output. In some examples, the user may have to interact with the representation of the advertisement before the advertisement is generated for output. In other examples, the user may be given an option to skip the advertisement and watch the media content.

[0006] A second advertisement may be identified, wherein the second advertisement is different from the first advertisement and the second advertisement is based on the identified item. A representation of the second advertisement may be received. The representation of the second advertisement and an interface may be generated for output at the computing device. The interface may comprise the representations of the first and second advertisements and enable a selection of the first or second advertisement to be received. A selection of the first or second advertisement is received at the computing device, the selected first or second advertisement is received at the computing device and the selected first or second advertisement is generated for output at the computing device. The first advertisement may be for the identified item, and the second advertisement may be for an item that is similar to the identified item. The interface may further comprise a reminder that indicates an indication of the wish list from which the item has been identified and a date associated with the wish list. Continuing the above example, after a user selects a media content item on a video sharing platform, but before the media content is generated for output for the user, representations for two advertisements may be received at the tablet device and representations may be generated for output along with a user interface. For example, the user interface may invite the user to select one of the two advertisements. The first advertisement may be for a specific item on the wish list, and the second advertisement may be for a similar item. For example, the first advertisement may be directed towards the specific brand and model of hairdryer that is on the wish list, and the second advertisement may be directed towards a different brand and/or model of hairdryer. The user may select one of the representations of the advertisements and, upon the system receiving the selection, that advertisement may be received and generated for output before the media content is output to the user. The user interface may also comprise a countdown timer, for example for five seconds, ten seconds or fourteen seconds, after which a default advertisement is shown to the user. In some examples, the user interface may comprise a reminder. The reminder may provide an indication of the wish list from which the item has been identified, for example, "Tim's Wish List." In another example, the reminder may provide a date associated with the wish list, for example, "Tim's Birthday Wish List-Sunday, December 5."

[0007] The wish list may be associated with a user, and an indication that the identified item on the wish list has not been purchased for the user may be received. For example, a wish list that is associated with an e-commerce site may be updated in real time, or substantially real time, such that when an item on a wish list is purchased for a user, the wish list is updated to indicate that the item has been purchased. In this way, advertisements are not output for items that have already been purchased for the user.

[0008] Identifying the first advertisement may further comprise generating the first advertisement by scraping a webpage associated with the identified item; extracting, from the webpage, one or more data items associated with the identified item; and processing the one or more data items. Receiving the first advertisement may further comprise receiving the generated advertisement. For example, an advertisement may not have been created for an item on the wish list; however, a manufacturer may have a promotional video on their website. The manufacturer's website may be scraped in order to extract the promotional video, and the promotional video may be used as the advertisement. In other examples, a format of the video may be altered before it is sent to a user. For example, if the promotional video on the manufacturer's website is in a high definition, it may

be transcoded to a lower definition. In a similar manner, if the promotional video is in a high resolution, it may be transcoded to a lower resolution. This transcoding may be based on the capabilities of the device receiving the advertisement. In other examples, other data such as up-to-date prices, promotional sales and/or any other information may be scraped from a website, such as an e-commerce website, and may form at least a part of the advertisement that is sent to the computing device.

[0009] Obtaining the media content may further comprise receiving a manifest file, the manifest file indicating a plurality of media content segments. Receiving the first advertisement may further comprise adding a plurality of first advertisement segments to the manifest file. The manifest file may be an HTML 5 manifest file, such as a media presentation description file (.mpd) file for MPEG DASH streaming. The manifest file may describe media content segments for streaming media content and may be appended to describe segments of the advertisement. The manifest file is typically received before any advertisement and/or media content is received at the computing device.

[0010] Accessing the wish list may further comprise accessing the wish list via a social network associated with the user profile, and a provider of the media content may be associated with the user profile via the social network. In an example, a user may log on to an over-the-top (OTT) platform, such as Disney+. The user may have a social network account associated with their OTT platform account. In some examples, the user may use their social network account to log on to the OTT platform. The user may have a wish list stored as part of their social media profile, which may be accessed via the OTT platform. The OTT platform may have an account on the social media platform that a user is connected to, and by connecting to the OTT platform account, the user may enable the OTT platform account to access parts of their social media profile, such as the wish list.

[0011] The interface may further enable an item, based on the representations of the first and/or second advertisements, to be purchased via the user interface. For example, the user interface may comprise a selectable element that a user can use to purchase the item. In some examples, the user may already be logged on to an e-commerce site, and the selectable element may enable the user to purchase the item without having to provide any additional details. In some examples, if the item is a digital download, then the digital download may automatically be sent to the subject of the wish list, for example, a link to download and/or activate a game and/or digital media content may be sent to the subject of the wish list. In some examples, the digital content may be automatically installed on a computing device associated with subject of the wish list.

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## Description

### BRIEF DESCRIPTIONS OF THE DRAWINGS

[0012] The present disclosure, in accordance with one or more various embodiments, is described in detail with reference to the following figures. The drawings are provided for purposes of illustration only and merely depict typical or example embodiments. These drawings are provided to facilitate an understanding of the concepts disclosed herein and shall not be considered limiting of the breadth, scope, or applicability of these concepts. It should be noted that for clarity and ease of illustration these drawings are not necessarily made to scale.

[0013] The above and other objects and advantages of the disclosure may be apparent upon consideration of the following detailed description, taken in conjunction with the accompanying drawings, in which:

[0014] FIG. 1 shows an example environment in which an advertisement, based on an item on a wish list, is generated for output, in accordance with some embodiments of the disclosure;

[0015] FIG. 2 shows another example environment in which an advertisement, based on an item on a wish list, is generated for output, in accordance with some embodiments of the disclosure;

[0016] FIG. 3 shows another example environment in which an advertisement, based on an item on a wish list, is generated for output, in accordance with some embodiments of the disclosure;

[0017] FIG. 4 shows another example environment in which an advertisement, based on an item on a wish list, is generated for output, in accordance with some embodiments of the disclosure;

[0018] FIG. 5 shows another example environment in which an advertisement, based on an item on a wish list, is generated for output, in accordance with some embodiments of the disclosure;

[0019] FIG. 6 shows another example environment in which an advertisement, based on an item on a wish list, is generated for output, in accordance with some embodiments of the disclosure;

[0020] FIG. 7 shows another example environment in which an advertisement, based on an item on a wish list, is generated for output, in accordance with some embodiments of the disclosure;

[0021] FIG. 8 shows another example environment in which an advertisement, based on an item on a wish list, is generated for output, in accordance with some embodiments of the disclosure;

[0022] FIG. 9 shows a block diagram representing components of a computing device and data flow therebetween for generating an advertisement for output based on an item on a wish list, in accordance with some embodiments of the disclosure; and

[0023] FIG. 10 shows a flowchart of illustrative steps involved in generating an advertisement for output based on an item on a wish list, in accordance with some embodiments of the disclosure.

#### DETAILED DESCRIPTION

[0024] Systems and methods are described herein for generating an advertisement for output based on an item on a wish list. A wish list can comprise any list of items. It may comprise a list of items that have been selected by a user for themselves (i.e., the user is the subject of the wish list). In another example, a wish list may comprise a list of items that have been selected by a first person for a second person. In some examples, the subject of the wish list may be a group of people. In other examples, the subject of the wish list may be an animal. A wish list may form part of an e-commerce site. For example, as a user is browsing an e-commerce site, they may be presented with an option that enables them to add one or more items to a wish list. In other examples, a user may curate a wish list by manually adding items to a wish list. In some examples, a wish list may be generated automatically, based on the browsing and/or viewing history of a user. A wish list may comprise detailed information about the items on the wish list, for example, the wish list may include a brand, model, price and/or a web-link related to the item. In other examples, the wish list may simply comprise an indication of an item, such as “laptop.”

[0025] Generating for output includes generating for display, generating for audio output and generating for a combination of display and audio output. Media content includes audio, video and/or any other media content. Audio includes audio-only content, such as podcasts, stories and music. Video includes audiovisual content such as movies and/or television programs. An over-the-top (OTT) content platform may be accessed via a website and/or an app running on a computing device and may receive any type of media content, including live media content and/or on-demand media content. Although the embodiments below may discuss receiving media content from a server, via a network such as the internet, media content may also be received via cable, satellite and/or a terrestrial broadcasting network.

[0026] An advertisement is any media content that describes an item. For example, it may comprise audio, video and/or a still image. It may comprise data describing the item, such as a price of the item. In some examples, an advertisement may comprise a link and/or a quick response (QR) code to an e-commerce site selling the item. An advertisement may be interactive, for example, enabling a user to play a game. A representation of an advertisement is any media content based on the advertisement. For example, it may comprise a still from a video, a text description, a short clip and/or an animation. The representation of the advertisement enables something to be output at a computing device before the advertisement is output. In some examples, it may aid a user in selecting an advertisement.

[0027] The disclosed methods and systems may be implemented on one or more computing

devices. As referred to herein, the computing device can be any device comprising a processor and memory, for example, a television, a smart television, a set-top box, an integrated receiver decoder (IRD) for handling satellite television, a digital storage device, a digital media receiver (DMR), a digital media adapter (DMA), a streaming media device, a DVD player, a DVD recorder, a connected DVD, a local media server, a BLU-RAY player, a BLU-RAY recorder, a personal computer (PC), a laptop computer, a tablet computer, a WebTV box, a personal computer television (PC/TV), a PC media server, a PC media center, a handheld computer, a stationary telephone, a personal digital assistant (PDA), a mobile telephone, a portable video player, a portable music player, a portable gaming machine, a smartphone, a smartwatch, an augmented reality device, a mixed reality device, a virtual reality device, or any other television equipment, computing equipment, or wireless device, and/or combination of the same.

[0028] The methods and/or any instructions for performing any of the embodiments discussed herein may be encoded on computer-readable media. Computer-readable media includes any media capable of storing data. The computer-readable media may be transitory, including, but not limited to, propagating electrical or electromagnetic signals, or may be non-transitory, including, but not limited to, volatile and non-volatile computer memory or storage devices such as a hard disk, floppy disk, USB drive, DVD, CD, media cards, register memory, processor caches, random access memory (RAM), etc.

[0029] FIG. 1 shows an example environment in which an advertisement, based on an item on a wish list, is generated for output, in accordance with some embodiments of the disclosure. The environment comprises a computing device, in this example, a smart television **100**. A user selects a media content item for viewing via a video sharing application, or an OTT application, with the remote control **102**. The remote control **102** is communicably coupled to the smart television **100** via infrared, Bluetooth and/or Wi-Fi. In some examples, the remote control may be an application running on a computing device, such as a smartphone or a tablet. A request to obtain the media content item is sent via a network **104**, such as the internet, to a server **106**. The network may comprise wired and/or wireless means for transmitting the request to the server **106**. In some examples, the server **106** is an edge server. In this example, the following steps **108**, **110**, **112** and **114** are carried out at the same server **106** that receives the request; however, any (including all) of the steps may be carried out at one or more other servers. These other servers may be different physical servers, different virtual machines running on the same server and/or a combination of the two. At the server **106**, a user profile is identified **108**. For example, this may be a user profile that a user uses to log on to a video sharing platform, an OTT platform or the smart television **100**. In some examples, the same profile may be used to log on to two or more services and/or devices. A wish list associated with the user profile is accessed **110**. For example, a user may have linked a profile that they use to log on to a video sharing platform, an OTT platform or the smart television **100** with an e-commerce website on which they have created a wish list. An item on the wish list is identified **112** and, based on the identified item on the wish list, an advertisement is identified **114**. A representation of the advertisement **116** is transmitted from the server **106**, via the network **104**, to the smart television **100**, where it is generated for output. The advertisement associated with the representation of the advertisement **116** may be sent to the smart television **100**, via the network **104**, and be automatically generated for output. In other examples, a user may need to interact with the representation of the advertisement **116** before the advertisement is generated for output. In other examples, the user may interact with the advertisement, for example, by selecting the advertisement in order to output more information about the item shown in the advertisement, or to purchase an item described in the advertisement. Once the representation of the advertisement **116** and/or the advertisement is generated for output and is output at the smart television **100**, the media content **118** is generated for output at the smart television **100**. The media content **118** is received via the network **104**, from the server **106**, and may be cached while the selected advertisement is being output at the smart television **100**. In other examples, the media content may be received

after the selected advertisement is output at the smart television **100**.

[0030] In some examples, a wish list service provider collates multiple wish lists from multiple users and tracks who the users share their wish list(s) with. The wish list service provider may make the wish lists available to an advertisement exchange, for example through a demand-side platform. An item on a wish list can be identified based on a pre-cached bid, in order to fill an order. The advertisement exchange can also exchange data with buyers of advertisements that a user profile meets a specific criterion, or criteria, for example, that an item on a wish list was shared with the user profile. In this way buyers of advertisements can bid on showing an advertisement on a device associated with the user profile. The exchange may select the winning bid, receive instructions for publishing the advertisement, for example via an advertisement server, and the advertisement creatives, for example a link to an XML file that comprises information relating to the advertisement. The advertising exchange may transmit this information to an advertisement publisher, for example through a supply side platform, such that the computing device at which the user profile associated with the winning bid is logged on to receives the advertisement creatives and generates the advertisement for display. In some examples, bids can be made and received in real time, for example, in response to a user selecting “play” at a media player. Real time bids may be made by an automated bidding system. The choice of the advertisement format available for a user can be presented a few seconds before an advertisement timepoint is reached. For example, an option to receive regular advertisements and/or wish list advertisements may be generated for output via a user interface. In another example, a settings menu may allow a user to select a global setting to receive regular advertisements and/or wish list advertisements.

[0031] FIG. 2 shows another example environment in which an advertisement, based on an item on a wish list, is generated for output, in accordance with some embodiments of the disclosure. In a similar manner to the environment depicted in FIG. 1, the environment comprises a computing device, in this example, a smart television **200**. A user selects a media content item for viewing on a video sharing application, or an OTT application, with the remote control **202**. A request to obtain the media content item is sent via a network **204**, such as the internet, to a server **206**. In this example, the following steps **208**, **210**, **212**, **214** and **216** are carried out at the same server **206** that receives the request; however, any (including all) of the steps may be carried out at one or more other servers. These other servers may be different physical servers, different virtual machines running on the same server and/or a combination of the two. At the server **206**, a user profile is identified **208**. A wish list associated with the user profile is accessed **210**. An item on the wish list is identified **212** and, based on the identified item on the wish list, a first advertisement is identified **214** and a second advertisement is identified **216**.

[0032] In an example, one or more items on the wish list are somewhat related to the media content. For example, if the media content comprises a character applying make-up, the first advertisement may be for make-up and the second advertisement may also be for make-up. Metadata such as price and whether the product is an original item on the wish list or is similar to an item on the wish list can be displayed as part of the representation of the advertisement and/or the advertisement to help the user select an item. In another example, a user can set a preference that filters the wish list items, such that only advertisements for items that meet a certain criterion (e.g., show advertisements for items on the wish list that cost less than \$40) are generated for display. In another example, a user can be presented with a user interface element that enables the user to randomly order any item on a wish list that is less than, for example, a certain price, such as \$40. For example, this feature can be offered through a “Surprise Me” button. In another example, a notification can be sent to the user. For example, an ordered item can be automatically added to a user's “Current Orders” on an e-commerce site. In any of the above examples the user interface element may be replaced by and/or supplemented with a voice command.

[0033] The first advertisement may reflect the exact item that is on the wish list, for example the

same brand and model of item. The second advertisement may be for an item that is similar to the item that is shown in the first advertisement, for example, the same type of item, but a different brand and/or model. The second advertisement may, in some examples, be for an item that is on sale or is at a lower price compared to the first advertisement. A representation of the first advertisement **218** and a representation of the second advertisement **220** are transmitted from the server **206**, via the network **204**, to the smart television **200**, where they are generated for output, along with a user interface **222**. The user interface may enable a user to select the representation of the first advertisement **218** or the representation of the second advertisement **220** for output. The user may use the remote control **202** to select the advertisement for output. In other examples, the user may generate a touch event on the touchscreen of a computing device in order to select an advertisement. The selected advertisement is sent to the smart television **200**, via the network **204**, and may be automatically generated for output. In other examples, the user may interact with the advertisement, for example, by selecting the advertisement in order to output more information about the item shown in the advertisement, or to purchase an item described in the advertisement. Once the selected advertisement is generated for output and is output at the smart television **200**, the media content **224** is generated for output at the smart television **200**. The media content **224** is received via the network **204**, from the server **206**.

[0034] FIG. **3** shows another example environment in which an advertisement, based on an item on a wish list, is generated for output, in accordance with some embodiments of the disclosure. In a similar manner to the environment depicted in FIGS. **1** and **2**, the environment comprises a computing device, in this example, a smart television **300**. A user selects a media content item for viewing via a video sharing application, or an OTT application, with the remote control **302**. A request to obtain the media content item is sent via a network **304**, such as the internet, to a server **306**. In this example, the following steps **308**, **310**, **312**, **314** and **316** are carried out at the same server **306** that receives the request; however, any (including all) of the steps may be carried out at one or more other servers. These other servers may be different physical servers, different virtual machines running on the same server and/or a combination of the two. At the server **306**, a user profile is identified **308**. A wish list associated with the user profile is accessed **310**. An item on the wish list is identified **312**, and it is identified whether or not the item has been purchased **314**. For example, a wish list that is associated with an e-commerce site may be updated in real time, or substantially real time, such that when an item on a wish list is purchased for a user, the wish list is updated to indicate that the item has been purchased. If the item has been purchased, another item is identified. An advertisement is identified **316** based on the identified item on the wish list. A representation of the advertisement **318** is transmitted from the server **306**, via the network **304**, to the smart television **300**, where it is generated for output. The advertisement associated with the representation of the advertisement **318** may be sent to the smart television **300**, via the network **304**, and be automatically generated for output. In other examples, a user may need to interact with the representation of the advertisement **318** before the advertisement is generated for output. In other examples, the user may interact with the advertisement, for example, by selecting the advertisement, in order to output more information about the item shown in the advertisement, or to purchase an item described in the advertisement. Once the representation of the advertisement **318** and/or the advertisement is generated for output and is output at the smart television **300**, the media content **320** is generated for output at the smart television **300**. The media content **320** is received via the network **304**, from the server **306**. In this example, a single representation of an advertisement is generated for output; however, it is also contemplated that two representations of advertisements may be generated for output in a similar manner to that described in connection with FIG. **2**, wherein step **314** comprises identifying whether the same or a similar item from the wish list has been purchased.

[0035] FIG. **4** shows another example environment in which an advertisement, based on an item on a wish list, is generated for output, in accordance with some embodiments of the disclosure. In a



similar manner to the environment depicted in FIGS. 1-3, the environment comprises a computing device, in this example, a smart television **400**. A user selects a media content item for viewing via a video sharing application, or an OTT application, with the remote control **402**. A request to obtain the media content item is sent via a network **404**, such as the internet, to a server **406**. In this example, the following steps **408**, **410**, **412**, **414**, **416**, **418** and **420** are carried out at the same server **406** that receives the request; however, any (including all) of the steps may be carried out at one or more other servers. These other servers may be different physical servers, different virtual machines running on the same server and/or a combination of the two. At the server **406**, a user profile is identified **408**. A wish list associated with the user profile is accessed **410**. An item on the wish list is identified **412**.

[0036] Based on the identified item, a webpage is scraped **414**, and a data item is extracted **416** from the webpage. For example, an advertisement may not have been created for an item on the wish list; however, a manufacturer may have a promotional video on their website. Image recognition may be utilized order to identify a brand and/or model of an item in an image associated with a wish list, and a web search may be automatically performed in order to identify an appropriate website. In this example, the manufacturer's website may be scraped in order to extract the promotional video, and the promotional video may be used as the advertisement. In other examples, a format of the video may be altered before it is sent to a user. For example, if the promotional video on the manufacturer's website is in a high definition, it may be transcoded to a lower definition. In a similar manner, if the promotional video is in a high resolution, it may be transcoded to a lower resolution. This transcoding may be based on the capabilities of the device receiving the advertisement. In other examples, other data such as up-to-date prices, promotional sales and/or any other information may be scraped from a website, such as an e-commerce website, and may form at least a part of the advertisement that is sent to the computing device.

[0037] In another example, the advertisement may be a product review that was posted or shared by a verified purchaser. For example, a product review video posted by a verified purchaser can be presented based on how many users indicated a positive response to the product review video. In some examples, a user may request, via a UI element in a user interface and/or an overlay, a top product review video after watching the advertisement in order to help decide whether to buy the item or not.

[0038] An advertisement is identified by generating an advertisement **418** based on the identified item on the wish list and the scraped data. A representation of the advertisement **418** is transmitted from the server **406**, via the network **404**, to the smart television **400**, where it is generated for output. The advertisement associated with the representation of the advertisement **418** may be sent to the smart television **400**, via the network **404** and be automatically generated for output. In other examples, a user may need to interact with the representation of the advertisement **418** before the advertisement is generated for output. In other examples, the user may interact with the advertisement, for example, by selecting the advertisement in order to output more information about the item shown in the advertisement, or to purchase an item described in the advertisement. Once the representation of the advertisement **418** and/or the advertisement is generated for output and is output at the smart television **400**, the media content **420** is generated for output at the smart television **400**. The media content **420** is received via the network **404**, from the server **406**. In this example, a single representation of an advertisement is generated for output; however, it is also contemplated that two representations of advertisements may be generated for output in a similar manner to that described in connection with FIG. 2, wherein webpages are scraped for either of, or both of, the identified advertisements.

[0039] FIG. 5 shows another example environment in which an advertisement, based on an item on a wish list, is generated for output, in accordance with some embodiments of the disclosure. In a similar manner to the environment depicted in FIGS. 1-4, the environment comprises a computing device, in this example, a smart television **500**. A user selects a media content item for viewing on a

video sharing application, or an OTT application, with the remote control **502**. A request to obtain the media content item is sent via a network **504**, such as the internet, to a server **506**. In this example, the following steps **508**, **510**, **512**, **514** and **516** are carried out at the same server **506** that receives the request; however, any (including all) of the steps may be carried out at one or more other servers. These other servers may be different physical servers, different virtual machines running on the same server and/or a combination of the two. At the server **506**, a user profile is identified **508**. A wish list associated with the user profile is accessed **510**. An item on the wish list is identified **512** and, based on the identified item on the wish list, a first advertisement is identified **514** and a second advertisement is identified **516**. The first advertisement may reflect the exact item that is on the wish list, for example, the same brand and model of item. The second advertisement may be for an item that is similar to the item that is shown in the first advertisement, for example, the same type of item, but a different brand and/or model. The second advertisement may, in some examples, be for an item that is on sale or is at a lower price compared to the first advertisement. A representation of the first advertisement **518** and a representation of the second advertisement **520** are transmitted from the server **506**, via the network **504**, to the smart television **500**, where they are generated for output, along with a user interface **522**. The user interface **522** may enable a user to select the representation of the first advertisement **518** or the representation of the second advertisement **520** for output. The user interface **522** also comprises a reminder **524** that is generated for output. The reminder may indicate a name of the wish list from which an item has been selected and/or may indicate a date associated with the wish list. In this example, the reminder is “Emma's Birthday Wish List August 19.” The reminder indicates the name of the wish list, “Emma's Birthday Wish List” and a date associated with the wish list, “August 19.” In some examples, an explicit date may be replaced with a countdown, for example, “in THREE days!” Data for including in the reminder may be obtained via the wish list itself. In other examples, a calendar associated with the user profile may be accessed and the wish list may be associated with an event in the calendar. The date may be obtained via the calendar. In another example, a trained machine learning model may be used to associate a wish list with an event of a plurality of events in a calendar. The user may use the remote control **502** to select the advertisement for output. In other examples, the user may generate a touch event on the touchscreen of a computing device in order to select an advertisement. The selected advertisement is sent to the smart television **500**, via the network **504**, and may be automatically generated for output. In other examples, the user may interact with the advertisement, for example, by selecting the advertisement in order to output more information about the item shown in the advertisement, or to purchase an item described in the advertisement. Once the selected advertisement is generated for output and is output at the smart television **500**, the media content **526** is generated for output at the smart television **500**. The media content **526** is received via the network **504**, from the server **506**.

[0040] FIG. **6** shows another example environment in which an advertisement, based on an item on a wish list, is generated for output, in accordance with some embodiments of the disclosure. In a similar manner to the environment depicted in FIGS. **1-5**, the environment comprises a computing device, in this example, a smart television **600**. A user selects a media content item for viewing via a video sharing application, or an OTT application, with the remote control **602**. A request to obtain the media content item is sent via a network **604**, such as the internet, to a server **606**. In this example, the following steps **608**, **610**, **612** and **614** are carried out at the same server **606** that receives the request; however, any (including all) of the steps may be carried out at one or more other servers. These other servers may be different physical servers, different virtual machines running on the same server and/or a combination of the two. At the server **606**, a user profile is identified **608**. A wish list associated with the user profile is accessed **610**. An item on the wish list is identified **612**. An advertisement is identified **614** based on the identified item on the wish list. A representation of the advertisement **618** is transmitted from the server **606**, via the network **604**, to the smart television **600**, where it is generated for output. The advertisement associated with the

representation of the advertisement **618** may be sent to the smart television **600**, via the network **604** and be automatically generated for output. In other examples, a user may need to interact with the representation of the advertisement **618** before the advertisement is generated for output. In other examples, the user may interact with the advertisement, for example, by selecting the advertisement in order to output more information about the item shown in the advertisement, or to purchase an item described in the advertisement. Once the representation of the advertisement **618** and/or the advertisement is generated for output and is output at the smart television **600**, the media content **620** is generated for output at the smart television **600**. The media content **620** is received via the network **604**, from the server **606**. Receiving the media content may comprise receiving a manifest file **616**, the manifest file indicating a plurality of media content segments. Receiving the first advertisement further comprises adding a plurality of first advertisement segments to the manifest file **616**. Similarly, the links to the video advertisement segments can be automatically added to the manifest file for the media content **620** (e.g., when server-side ad insertion or SSAI is utilized). Such bids can take place when the user hits “play” or even while a user is watching live TV. The manifest file may be an HTML 5 manifest file, such as a media presentation description file (.mpd) file for MPEG DASH streaming. In another example, the manifest file may be an M3U8 playlist file (.m3u8) for HTTP live streaming (HLS). The manifest file may describe media content segments for streaming media content and may be appended to describe segments of the advertisement. The manifest file is typically received before any advertisement and/or media content is received at the computing device. In this example, a single representation of an advertisement is generated for output; however, it is also contemplated that two representations of advertisements may be generated for output in a similar manner to that described in connection with FIG. 2.

[0041] FIG. 7 shows another example environment in which an advertisement, based on an item on a wish list, is generated for output, in accordance with some embodiments of the disclosure. In a similar manner to the environment depicted in FIGS. 1-6, the environment comprises a computing device, in this example, a smart television **700**. A user selects a media content item for viewing via a video sharing application, or an OTT application, with the remote control **702**. A request to obtain the media content item is sent via a network **704**, such as the internet, to a server **706**. In this example, the following steps **708**, **710**, **712**, **714** and **716** are carried out at the same server **706** that receives the request; however, any (including all) of the steps may be carried out at one or more other servers. These other servers may be different physical servers, different virtual machines running on the same server and/or a combination of the two. At the server **706**, a user profile is identified **708** and a social network associated with the profile is accessed **710**. A user may log on to an OTT platform, such as Amazon Prime, at their smart television **700**. The user may have a social network account associated with their OTT platform account. In some examples, the user may use their social network account to log on to the OTT platform. The user may have a wish list stored as part of their social media profile, which may be accessed via the OTT platform. The OTT platform may have an account on the social media platform that a user is connected to, and by connecting to the OTT platform account, the user may enable the OTT platform account to access parts of their social media profile, such as the wish list. A wish list associated with the user profile is accessed **712**. An item on the wish list is identified **714**. An advertisement is identified **716** based on the identified item on the wish list. A representation of the advertisement **718** is transmitted from the server **706**, via the network **704**, to the smart television **700**, where it is generated for output. The advertisement associated with the representation of the advertisement **718** may be sent to the smart television **700**, via the network **704**, and be automatically generated for output. In other examples, a user may need to interact with the representation of the advertisement **718** before the advertisement is generated for output. In other examples, the user may interact with the advertisement, for example, by selecting the advertisement in order to output more information about the item shown in the advertisement, or to purchase an item described in the advertisement.

Once the representation of the advertisement **718** and/or the advertisement is generated for output and is output at the smart television **700**, the media content **720** is generated for output at the smart television **700**. The media content **720** is received via the network **704**, from the server **706**. In this example, a single representation of an advertisement is generated for output; however, it is also contemplated that two representations of advertisements may be generated for output in a similar manner to that described in connection with FIG. 2.

[0042] FIG. 8 shows another example environment in which an advertisement, based on an item on a wish list, is generated for output, in accordance with some embodiments of the disclosure. In a similar manner to the environment depicted in FIGS. 1-7, the environment comprises a computing device, in this example, a smart television **800**. A user selects a media content item for viewing on a video sharing application, or an OTT application, with the remote control **802**. A request to obtain the media content item is sent via a network **804**, such as the internet, to a server **806**. In this example, the following steps **808**, **810**, **812**, **814**, **816** and **818** are carried out at the same server **806** that receives the request; however, any (including all) of the steps may be carried out at one or more other servers. These other servers may be different physical servers, different virtual machines running on the same server and/or a combination of the two. At the server **806**, a user profile is identified **808**. A wish list associated with the user profile is accessed **810**. An item on the wish list is identified **812** and, based on the identified item on the wish list, a first advertisement is identified **814** and a second advertisement is identified **816**. The first advertisement may reflect the exact item that is on the wish list, for example the same brand and model of item. The second advertisement may be for an item that is similar to the item that is shown in the first advertisement, for example, the same type of item, but a different brand and/or model. The second advertisement may, in some examples, be for an item that is on sale or is at a lower price compared to the first advertisement. A representation of the first advertisement **818** and a representation of the second advertisement **820** are transmitted from the server **806**, via the network **804**, to the smart television **800** where they are generated for output, along with a user interface **822**. The user interface **822** may enable a user to select the representation of the first advertisement **818** or the representation of the second advertisement **820** for output. In addition, the user interface **822** may comprise an UI element, such as a button **824**, that enables a user to purchase an item associated with the representation of the advertisement or the advertisement. In some examples, the user may already be logged on to an e-commerce site and the selectable element may enable the user to purchase the item without having to provide any additional details. In some examples, if the item is a digital download, then the digital download may automatically be sent to the subject of the wish list. For example, a link to download and/or activate a game and/or digital media content may be sent to the subject of the wish list. In some examples, the digital content may be automatically installed on a computing device associated with subject of the wish list. The user may use the remote control **802** to select the advertisement for output and/or to select the button **824**. In other examples, the user may generate a touch event on the touchscreen of a computing device in order to select an advertisement for output and/or to select the button **824**. The selected advertisement is sent to the smart television **800**, via the network **804**, and may be automatically generated for output. In other examples, the user may interact with the advertisement, for example, by selecting the advertisement in order to output more information about the item shown in the advertisement, or to purchase an item described in the advertisement. Once the selected advertisement is generated for output and is output at the smart television **800**, the media content **826** is generated for output at the smart television **200**. The media content **826** is received via the network **804**, from the server **806**.

[0043] In some examples, the representation of the advertisement and/or the advertisement may comprise a user interface element that enables a user to complete a purchase of an item associated with the representation of the advertisement and/or the advertisement. For example, the user interface element may enable a user to send a link, such as a link to a web page, to a mobile computing device, such as a smartphone. The link may be sent via a messaging service, such as

WhatsApp and/or may be displayed to a user via a notification on the computing device. In another example, the user interface element may enable a user to purchase an item via their OTT service. For example, on receiving a selection of a user interface element, the user may be billed via their OTT service and the item may be shipped to an address associated with the OTT service, for example an address associated with a user profile that is logged on to the OTT service. The user interface element may include a sale price and/or lower price that is only valid for a set period of time, in order to entice a user to purchase an item.

[0044] In some examples, the advertisement is not directly related to items on a wish list but is based on items that a user has purchased in the past. For example, a user might have purchased an electric toothbrush two years ago, in which case an advertisement selection algorithm might determine that the user might want to buy the newer model. An advertisement in such scenario may be based on the new model and may further comprise an indication that the user purchased an older model two years ago. Similarly, an advertisement can identified in response to an item on wish list, wherein the price has been lowered. In some examples, the wish list may be a user's personal shopping list. In this example, the advertisement can be based on such an item with an indication that the item is on the user's personal shopping list and that the price has been lowered. The lowering of the price may be in response to a brand winning a bid for the advertisement and deciding to make the item available at a lower price for certain period.

[0045] FIG. 9 shows a block diagram representing components of a computing device and data flow therebetween for generating an advertisement for output based on an item on a wish list, in accordance with some embodiments of the disclosure. Computing device **900** (e.g., a smart television **100, 200, 300, 400, 500, 600, 700, 800**) as discussed above comprises input circuitry **904**, control circuitry **908** and an output module **942**. Control circuitry **908** may be based on any suitable processing circuitry (not shown) and comprises control circuits and memory circuits, which may be disposed on a single integrated circuit or may be discrete components and processing circuitry. As referred to herein, processing circuitry should be understood to mean circuitry based on one or more microprocessors, microcontrollers, digital signal processors, programmable logic devices, field-programmable gate arrays (FPGAs), application-specific integrated circuits (ASICs), etc., and may include a multi-core processor (e.g., dual-core, quad-core, hexa-core, or any suitable number of cores). In some embodiments, processing circuitry may be distributed across multiple separate processors or processing units, for example, multiple of the same type of processing units (e.g., two Intel Core i9 processors) or multiple different processors (e.g., an Intel Core i5 processor and an Intel Core i7 processor) and/or a system on a chip (e.g., a Qualcomm Snapdragon 888). Some control circuits may be implemented in hardware, firmware, or software.

[0046] A user provides an input **902**, which is received by the input circuitry **904**. The input circuitry **904** is configured to receive a user input related to a computing device. For example, this may be via a touchscreen, keyboard, mouse, microphone, infra-red controller, Bluetooth controller and/or Wi-Fi controller of the computing device **900**. The input circuitry **904** transmits **906** the user input to the control circuitry **908**.

[0047] The control circuitry **908** comprises a media content requesting module **910**, a user profile identifying module **914**, a wish list accessing module **918**, an item identifying module **922**, an advertisement identifying module **926**, an advertisement representation receiving module **930**, a media content receiving module **934**, an advertisement representation generating module **938** and a media content generating module **944**. The user input is transmitted **906** to the media content requesting module **910**. At the media content requesting module **910**, a media content item is requested. On requesting the media content item, an indication is transmitted **912** to the user profile identifying module **914**, where a user profile is identified. The user profile is transmitted **916** to the wish list accessing module **918**, where a wish list is accessed based on the user profile. The wish list is transmitted **920** to the item identifying module **922**, where an item on the wish list is identified. The identified item is transmitted **924** to the advertisement identifying module **926**,

where an advertisement is identified. An indication of the identified advertisement is transmitted **928** to the advertisement representation receiving module **930**, where a representation of the advertisement is received. An indication that a representation of the advertisement has been received is transmitted **932** to the media content receiving module **934**, where the media content item is received. An indication is transmitted **936** to the output module **938**. At the output module **938**, the advertisement representation generation module **938** generates a representation of the advertisement for output and an indication is transmitted **942** to the media content generating module **944**, where the media content item is generated for output.

[0048] FIG. **10** shows a flowchart of illustrative steps involved in generating an advertisement for output based on an item on a wish list, in accordance with some embodiments of the disclosure. Process **1000** may be implemented on any of the aforementioned computing devices (e.g., smart television **100**, **200**, **300**, **400**, **500**, **600**, **700**, **800**). In addition, one or more actions of the process **1000** may be incorporated into or combined with one or more actions of any other process or embodiments described herein.

[0049] At **1002**, a request to obtain media content is received. At **1004**, a user profile is identified. At **1006**, a wish list is accessed. At **1008**, an item on the wish list is identified. At **1010**, an advertisement is identified. At **1012**, a representation of an advertisement is received. At **1014**, media content is received. At **1016**, a representation of the advertisement is generated. At **1018**, a media content item is generated for display.

[0050] The processes described above are intended to be illustrative and not limiting. One skilled in the art would appreciate that the steps of the processes discussed herein may be omitted, modified, combined, and/or rearranged, and any additional steps may be performed without departing from the scope of the disclosure. More generally, the above disclosure is meant to be exemplary and not limiting. Furthermore, it should be noted that the features and limitations described in any one embodiment may be applied to any other embodiment herein, and flowcharts or examples relating to one embodiment may be combined with any other embodiment in a suitable manner, done in different orders, or done in parallel. In addition, the systems and methods described herein may be performed in real time. It should also be noted that the systems and/or methods described above may be applied to, or used in accordance with, other systems and/or methods.

## Claims

1. (canceled)
2. A method comprising: receiving, from a user device, a request for media content, wherein the request is associated with a user profile; based on receiving the request for the media content: identifying a timepoint in the media content to add supplemental content; accessing a wish list associated with the user profile and a second user profile; accessing a calendar associated with the user profile; providing the wish list and the calendar to a machine learning (ML) model; and receiving, from the ML model, ML output comprising a selection of an item from the wish list and a selection of an event in the calendar; and providing, for display via a user interface at the user device, (a) the supplemental content at the timepoint in the media content, wherein the supplemental content is based on the selected item in the wish list and (b) a countdown timer counting from a current date to the event.
3. The method of claim 2, further comprising: training the ML model to correlate the wish list with the event in the calendar.
4. The method of claim 2, wherein the supplemental content is further based on an item similar to the selected item in the wish list.
5. The method of claim 2, further comprising: providing, for display at the user device, an indication of the wish list from which the ML model has selected the item.
6. The method of claim 2, wherein the supplemental content is a first supplemental content; and

wherein the method further comprises: identifying a second supplemental content, wherein the second supplemental content is different from the first supplemental content and the second supplemental content is based on the selected item in the wish list; providing, at the user device, a representation of the first supplemental content and a representation of the second supplemental content; and wherein the providing, for display via a user interface at the user device, the supplemental content at the timepoint in the media content is further based on receiving, from the user device, a selection of the representation of the first supplemental content.

**7.** The method of claim 6, wherein the user interface enables an item, based on the representations of at least one of the first or second supplemental content, to be purchased via the user interface.

**8.** The method of claim 2, further comprising receiving, via the user interface at the user device, an indication that the selected item in the wish list has not been purchased.

**9.** The method of claim 2, wherein the identifying the timepoint in the media content to add the supplemental content further comprises: receiving a manifest file associated with the media content, wherein the manifest file describes a plurality of segments of the media content; and identifying, based on the manifest file description of the plurality of segments of the media content, a segment of the plurality of segments to append a plurality of segments of the supplemental content.

**10.** The method of claim 2, wherein the supplemental content is further based on scraping a webpage associated with the identified item; extracting, from the webpage, one or more data items associated with the identified item; and processing the one or more data items.

**11.** The method of claim 2: wherein accessing the wish list further comprises accessing the wish list via an exchange for supplemental content; wherein identifying the item in the wish list further comprises identifying the item at the exchange for supplemental content; and wherein providing, for display via the user interface at the user device, the supplemental content is further based on identifying the supplemental content based on a pre-cached bid.

**12.** The method of claim 2, wherein accessing the wish list further comprises accessing the wish list via a social network associated with the user profile; and wherein a provider of the media content is associated with the user profile via the social network.

**13.** A system comprising: input/output circuitry configured to: receive, from a user device, a request for media content, wherein the request is associated with a user profile; control circuitry configured to: based on receiving the request for the media content: identify a timepoint in the media content to add supplemental content; accessing a wish list associated with the user profile and a second user profile; access a calendar associated with the user profile; provide the wish list and the calendar to a machine learning (ML) model; and receive, from the ML model, ML output comprising a selection of an item from the wish list and a selection of an event in the calendar; and provide, for display via a user interface at the user device, (a) the supplemental content at the timepoint in the media content, wherein the supplemental content is based on the selected item in the wish list and (b) a countdown timer counting from a current date to the event.

**14.** The system of claim 13, wherein the control circuitry is further configured to: train the ML model to correlate the wish list with the event in the calendar.

**15.** The system of claim 13, wherein the supplemental content is further based on an item similar to the selected item in the wish list.

**16.** The system of claim 13, wherein the control circuitry is further configured to: provide, for display at the user device, an indication of the wish list from which the ML model has selected the item.

**17.** The system of claim 13, wherein the supplemental content is a first supplemental content; and wherein the control circuitry is further configured to: identify a second supplemental content, wherein the second supplemental content is different from the first supplemental content and the second supplemental content is based on the selected item in the wish list; provide, at the user device, a representation of the first supplemental content and a representation of the second

supplemental content; and wherein the providing, for display via a user interface at the user device, the supplemental content at the timepoint in the media content is further based on receiving, from the user device, a selection of the representation of the first supplemental content.

**18.** The system of claim 17, wherein the user interface enables an item, based on the representations of at least one of the first or second supplemental content, to be purchased via the user interface.

**19.** The system of claim 13, wherein the control circuitry is further configured to: receive, via the user interface at the user device, an indication that the selected item in the wish list has not been purchased.

**20.** The system of claim 13, wherein the identifying the timepoint in the media content to add the supplemental content further comprises: receiving a manifest file associated with the media content, wherein the manifest file describes a plurality of segments of the media content; and identifying, based on the manifest file description of the plurality of segments of the media content, a segment of the plurality of segments to append a plurality of segments of the supplemental content.

**21.** The system of claim 13, wherein the supplemental content is further based on scraping a webpage associated with the identified item; extracting, from the webpage, one or more data items associated with the identified item; and processing the one or more data items.

**22.** The system of claim 13: wherein accessing the wish list further comprises accessing the wish list via an exchange for supplemental content; wherein identifying the item in the wish list further comprises identifying the item at the exchange for supplemental content; and wherein providing, for display via the user interface at the user device, the supplemental content is further based on identifying the supplemental content based on a pre-cached bid.

**23.** The system of claim 13, wherein accessing the wish list further comprises accessing the wish list via a social network associated with the user profile; and wherein a provider of the media content is associated with the user profile via the social network.

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