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SYSTEMS AND METHODS FOR SOCIAL SHARING OF SUGGESTED CONTENT ITEMS

Systems and methods of the present disclosure provide a data processing system that allows for social sharing of suggested content items configured with an action button. The data processing system generates an online content item (e.g., an online advertisement) to display to a user via an online social network feed. The data processing system identifies one or more friends of the user that may be interested in the content item, and configures the content item with an action button that allows the user to share the content item with the identified one or more friends. The data processing system can determine whether the user shared the content item with an identified friend, and can generate a conversion metric for the content item based on this sharing event.

With reference to Figs. 1A and 1B below, an example graphical user interface provided by the data processing system is shown. The data processing system provides and manages a user's social network feeds 100 or 165. The user's social network feeds 100 or 165 can include one or more content items 110, 135 or 160. Content items can include posts, articles, links, video, images, multimedia, or online documents. The user's friend can post or share a content item to the user's feed. Thus, when the user receives a first content item shared by the user's friend, the user can be referred to as the recipient of the first content item 110. When the user's friend shares or provides the first content item 110 to the recipient, the friend can be referred to as the sender of the first content item 110. The data processing system can include one or more buttons 115, 120, 125, 165 along with the shared content items 110 or 160. Buttons can include, for example, a like button 115 or 165, a comment button 120, or a share button 125. The recipient can select, via a user interface, the like button 115 to indicate an interest in the shared first content item 110. The recipient can select the comment button 120 to provide feedback on the shared content item 110. Or the recipient can select the share button 125 to transmit or provide the content item 110 to one or more other users or friends using one or more communication channels (e.g., via a social network, via the data processing system, electronic mail, or text message).

The data processing system can automatically select a second content item based on at least one of the shared content item 110 and an attribute of the link between the sender and the recipient. An attribute of the link can include, for example, the duration of the link, type of connection (e.g., friends, classmates, colleagues, no previous connection or link), or similarities between profiles of the sender and recipient. The second content item can be an advertisement for a job, such as "Company X is hiring a stack software engineer" (135), or an advertisement for a mobile application such as a video game. Upon selecting the second content item, the data processing system can generate a suggestion or query for the second content item such as: "Would your friend Joe be a good fit for Company X?" (140). The data processing system can further configure an action item 145 for the second content item 135 or the query 140. The action item 145 can be a user interface widget, such as a button. The action item 145 can be triggered via user selection of the action item button 145. Triggering the action item 145 can cause the data processing system to share the second content item selected by the data processing system with the sender of the first content item 110. Sharing the second content item can include displaying or providing the second content item 160 on the sender's social network feed 165. Furthermore, the data processing system can record or log the triggering of the action item 145 as a conversion event, and update a corresponding performance metric such as conversion rate.

With reference to Fig. 2 below, the system 200 can include a data processing system 205. The system 200 can include or interact with one or more computing devices 230, 235 and a network 220. The data processing system 205 can include a social feed manager 210, content selector 215, and data repository 220. The data processing system 205, social feed manager 210, content selector 215, and computing devices 230 or 235 can include one or more servers, processors, computing devices, memory, logic arrays, circuitry, software or hardware modules, logic elements, or digital logic blocks configured to facilitate socially sharing content items.

Computing devices 230 and 235 can access or interact with the data processing system 205 via network 225 to access a social network feed 100 or 165. The computing devices 230 or 235 can include, for example, mobile computing devices, mobile telecommunications devices, smartphones, personal digital assistants, laptop computers, notebooks, tablet computers, smart watches, or wearable devices. The computing devices 230 and 235 can include a display such as a liquid crystal display, light emitting diode (LED) based display, organic light emitting diode based display, bitmap display, pixel display, electronic ink display, or other display configured to visually output content including text, characters, strings, symbols, images, or multimedia content provided by a social network feed. The computing devices 230 and 235 can include an input interface designed and constructed to receive input from a user. Input interfaces can include or provide, for example, touch input, keyboard, mouse, motion, sensor, location sensor, touchpad, trackpad, or a scroll wheel. The location sensor can provide location information or facilitate determining a location of the computing device. The location sensor can determine the location of the ordering device using one or more techniques such as global positioning system, WIFI triangulation, IP address, Bluetooth, or cellular tower triangulation. The location information can be used to facilitate selecting content items. The network 225 can include one or more of any type of computer network such as the Internet, cellular network, WIFI network, WiMAX network, mesh network, Bluetooth, near field communication, satellite network, or other data network that facilitates communications between the data processing system 205 and computing devices 230 and 235.

Still referring to Fig. 2, and in further detail, the data processing system 205 includes a social feed manager 210. The social feed manager 210 can maintain and provide a social feed of a social network, such as the recipient's social network feed 100 or the sender's social network feed 165. A social network can refer to a website or other application that enables users to communicate with each other by posting information, comments, messages, images, multimedia, links, or other online documents. The social feed manager 210 can access data in data repository 220. For example, the social feed manager 220 can access profiles of users of the social network stored in data repository 220. A user profile can include identifying information, relationship status, privacy settings, location information, posts, comments, work, education, hobbies, friends, historical data, biographical data, or any other user information. The social feed manager 220 can access a social graph stored in data repository 220. A social graph can identify relationships between two or more users. A relationship between users can refer to a first user being linked with a second user. For example, the first user can access, via a computing device 230, a graphical user interface established by the social feed manager 210 to initiate a friend request. The social feed manager 210 can transmit the friend request via network 225 to the second user's computing device 235. The second user can accept or reject the friend request via computing device 235.

Should the second user accept the friend request, the social feed manager 210 can update the social graph stored in data repository 220 to reflect the new link between the first user and the second user. The social feed manager 210 can further determine an attribute of the link. For example, an attribute may include a time stamp of when the friend request was generated and a time stamp of when the friend request was accepted. An attribute may include a duration of the link, such as how long it took for the friend request to be accepted, or for how long the link has been active. An attribute of the link can indicate the level of activity of the link, such as a number of posts the first user shares with the second user. An attribute of the link can indicate a similarity of the two users. Similarity can be determined based on profile information. The social feed manager 210 can determine a level of similarity based on the profile information (e.g., both users work or worked at the same company; live in the same location; same age; or common hobbies or interests). The social feed manager 210 can determine a level of similarity based on the number or percentage of overlapping friends being greater than a threshold. For example, if 25% of the users' friends are the same, the data processing system 205 can determine a higher level of similarity compared to if only 1% of the users' friends were the same.

The social feed manager 210 can be designed and constructed to monitor online posts that are shared between friends. The social feed manager 210 can detect that a user shared an online post with another user, such as the user's friend. For example, a sender computing device 235 can transmit or provide an online post (e.g., content item 110) to a recipient friend's social network feed 100. The social feed manager 210 can display the shared online post on the recipient's social network feed 100. The social feed manager 210 can further indicate that the sender shared the post by stating "Sender's shared content item" (105). The social feed network can identify the sender by name, username or other identifier. Upon detecting that the sender shared an online post with a friend, the social feed manager 210 can trigger the content selector 215. The social feed manager 210 can initiate or launch the content selector 215 and pass, to the content selector 215, data that facilitate the content selector 215 to select a second content item responsive to or based on the first content item.

The data processing system 205 can include a content selector 215. The content selector 215 can receive a request for a content item. In some cases, the content selector 215 may not receive a request for a content item, but may automatically detect that a post was shared and initiate a content selection process for a second post responsive to or based on the first post. To select a second content item to display to the recipient, the content selector 215 can use various characteristics or criteria associated with the shared content item 110, the profile associated with the sender computing device 235, the profile associated with the recipient's computing device or location information. In some cases, the content selector 215 can determine location information associated with the recipient computing device 230 or the sender computing device 235.

For example, the content selector 215 can parse the first content item to determine a topic, keyword, or content vertical of the first content item. The content selector 215 can generate a query with one or more keywords of the first content item. The content selector 215 can then query the content item data structure stored in data repository 220 using the generated query with the keywords to identify one or more content items responsive to the first content item. In some cases, the content selector 215 may initiate a real-time online auction with the two or more content items that satisfy the query in order to select a content item to provide to the recipient's social network feed 100. For example, each content item can be associated with a bid amount, and the content selector 215 can identify the highest ranking content item of the auction

based, at least in part, on the bid amount of the content item. The content selector 215 may take into account additional factors such as a relevancy or quality of the content item when selecting a content item.

5 Upon selecting the winning or highest ranking content item, the content selector 215 can provide the content item as the second content item 135 for display on the recipient's social network feed 100. The content selector 215 can provide the second content item 135 along with an indication that it is a suggested post 130. The content selector 215 can display the second content item in proximity to the first content item 110, such as adjacent to the first content item 110.

10 The content selector 215 can further generate a query or a call to action to provide alongside or with the second content item 135. In some cases, a content provider 240 of the content item can set up a content campaign with query templates that are stored with the content items in the data repository 220. A query template for a content item can include, for example, "Would <sender> be a good fit for Company X?" In this template, the variable is <sender>. The content selector 215 can identify the template associated with the second content item 135, and then populate the template or use the template to generate the query 140 by inputting the sender's name.

20 The content selector 215 can provide an action item 145 for the second content item 135. The content selector 215 can provide the action item 145 for display on the recipient's social network feed 100 with the second content item 135 or the call to action or query 140. The content selector 215 can select the action item 145 from a plurality of action items. In some cases, the content selector 215 can be configured to select a default action item, such as Share with Sender of the first content item 145. In some cases, the content provider 240 can assign an action item from a predetermined plurality of action items to provide with the second content item 135. The predetermined plurality of action items can include, for example, share with family, share with co-workers, share with high school friends, share with friends near my location, share with friends my age, share with my friends who also like a type of movie or a specific movie, share with my friends who also shared a post with me in the last time interval (e.g., 24 hours, 48 hours, or 1 week). The action item 145 can include a user interface widget such as a button, drop down menu or other actionable object. The action item 145 can include a drop down menu with multiple action items.

35 The content selector 215 can configure the action item 145 with a trigger. The action item 145 can be triggered responsive to an interaction from the recipient's computing device 230. For example, the recipient's computing device 230 can include an input interface, such as a mouse, keyboard, or touch interface that is configured to receive user input and cause the action item 145 to be triggered. The social feed manager 210 can monitor the recipient's social network feed 100 and detect that the action item 145 was triggered. Responsive to the triggering of the action item 145, the social deed manager 215 can perform the corresponding action. For example, if the action item 145 is to share the second content item 135 with the sender of the first content item 110, the social feed manager 210 can transmit or provide the second content item 135 to the sender's social network feed 165. The social feed manager 210 can display the second content item 135 on the sender's social network feed 165 as second content item 160. The social feed manager 210 can further provide an indication: Recipient's shared content item 155. The sender can access the sender's social network feed 165 using sender computing device 235 via network 225.

The data processing system 205 can generate a performance metric based on the recipient sharing the suggested second content item 135 with the sender of the first content item. The performance metric may include a conversion metric or an engagement metric. For example, the data processing system can determine a conversion occurred based on the recipient triggering the action button 145. A conversion can refer to the user performing a desired action. The data processing system can also associate this conversion with a second engagement (or re-engagement) metric because the recipient has now re-engaged with the sender responsive to the sender initially engaging with the recipient by sharing the first content item 110 on the recipient's social network feed 100. In some cases, if the sender interacts with the second content item 160 displayed on the sender's social network feed 165, the data processing system can identify a third engagement (e.g., first engagement was sender sharing post with recipient; second engagement was recipient sharing post suggested by data processing system with sender; and third engagement is the sender interacting with the second content item 160). The sender can interact with the second content item 160 by selecting a link of the second content item 160, or selecting a button 165 associated with the second content item, such as a like button 165. The data processing system can update the performance metric data structure stored in data repository 205 based on the number of conversions and the engagement levels. An engagement metric for a content item can be the number of second level engagements divided by the number of first level engagements. Another engagement metric for a content item can be the number of third level engagements divided by the number of first level engagements. Yet another engagement metric for a content item can be the number of third level engagements divided by the number of second level engagements.

Referring now to Fig. 3 below, a method 300 of social sharing of suggested content items is shown. One or more components of system 200 (e.g., data processing system 205, computing device 230, 235, 240) can perform the method 300 illustrated by the flow chart in Fig. 3. In brief overview, the method 300 includes, at step 305, a data processing system receiving an indication from a sender computing device to share a first content item with a recipient. At step 310, the data processing system provides the first content item for display on the recipient's computing device. At step 315, the data processing system selects a second content item to display to the recipient. At step 320, the data processing system configures an action button for the second content item. The action button can be configured to share the second content item with the sender of the first content item. At step 325, the data processing system receives, from the recipient via the action button, an indication to share the second content item with the sender of the first content item. At step 330, the data processing system provides the second content item to the sender for display on the sender's computing device. At step 335, the data processing system can update a performance metric for the second content item based on the indication received from the recipient via the action button.

In further detail, the method 300 includes the data processing system receiving an indication from a sender computing device to share a first content item with a recipient at step 305. The sender can be linked with the recipient because they are friends in the social network graph. In some cases, the sender may not be previously linked in the social network graph. For example, the data processing system 205 may lack a link between the sender and the recipient. In this case, the sender sharing the post with the recipient may be the first interaction between the sender and the recipient via the data processing system. The data processing system, responsive to detecting this first interaction, can create a link between the sender and the recipient and then update the social graph accordingly.

At step 310, the data processing system provides the first content item for display on the recipient's computing device. The data processing system can provide the first content item for display on the recipient's social network feed. The recipient can access the recipient's social network feed via the recipient's computing device.

5 At step 315, the data processing system selects a second content item to display to the recipient. The data processing system can select the content item using various content selection criteria. The data processing system can select the second content item based on keywords of the first content item. The data processing system can use additional factors associated with the social network feed, profile, content item, or computing devices of the sender or recipient to
10 select the suggested content item.

At step 320, the data processing system configures an action button for the second content item. The action button can be configured to share the second content item with the sender of the first content item. The action button can include the sender's identifier. The action button can be configured to receive an interaction from the recipient.

15 At step 325, the data processing system receives, from the recipient via the action button, an indication to share the second content item with the sender of the first content item. For example, the recipient can click on or otherwise select the action button. The data processing system can detect that the recipient selected the action button.

At step 330, the data processing system provides the second content item to the sender for
20 display on the sender's computing device. The data processing system can provide the second content item responsive to the recipient selecting the action button. The data processing system can provide the second content item to the sender's social network feed. The sender can access the sender's social network feed via the sender's computing device. The data processing system can indicate on the sender's social network feed that the second content item was shared by the
25 recipient. The data processing system can identify the recipient's using an identifier.

At step 335, the data processing system can update a performance metric for the second content item based on the indication received from the recipient via the action button. The data processing system can determine that the recipient sharing the suggested content item with the sender corresponds to a conversion. The data processing system can store the conversion or
30 update a conversion metric, such as a number of conversion, conversion count, or conversion rate. Conversion rate can refer to a number of conversions divided by the number of impressions. An impression can refer to the second content item being displayed on the recipient's social network feed.

Thus, systems, methods and apparatus of the present disclose can facilitate socially
35 sharing suggested content items. In an illustrative example, a first member of a social network can share a post with a second member of the social network. A data processing system can select a suggested advertisement based on the shared post for display on the second member's social network feed. The advertisement can be for an application such as a video game. The data processing system can provide an action button with the advertisement to share the
40 advertisement for the video game with the first member. The second member can select the action button and share the advertisement for the video game with the first member via the first member's social network feed. The first member can view the shared advertisement via the first member's social network feed, and then purchase or download the video game. In some cases, the first member can purchase or download the video game for the second member.

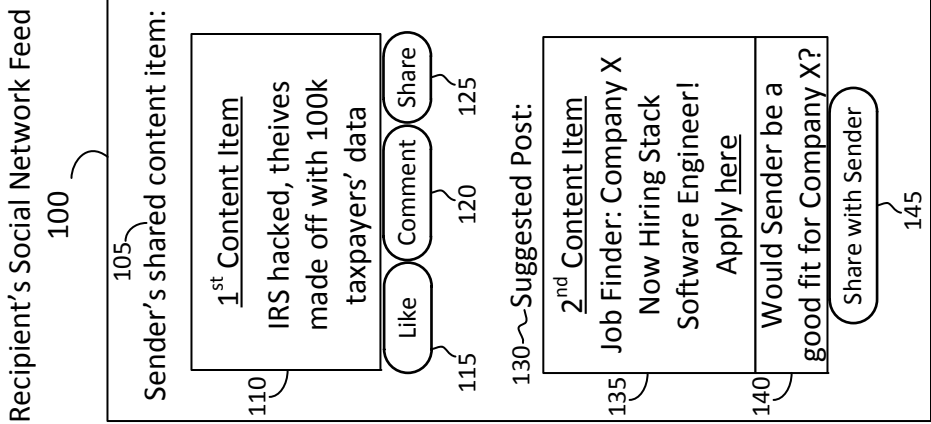


FIG. 1A

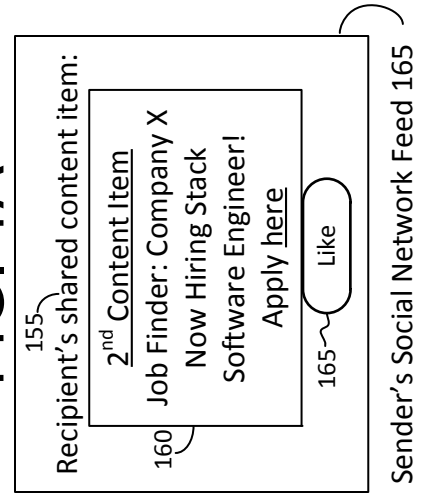


FIG. 1B

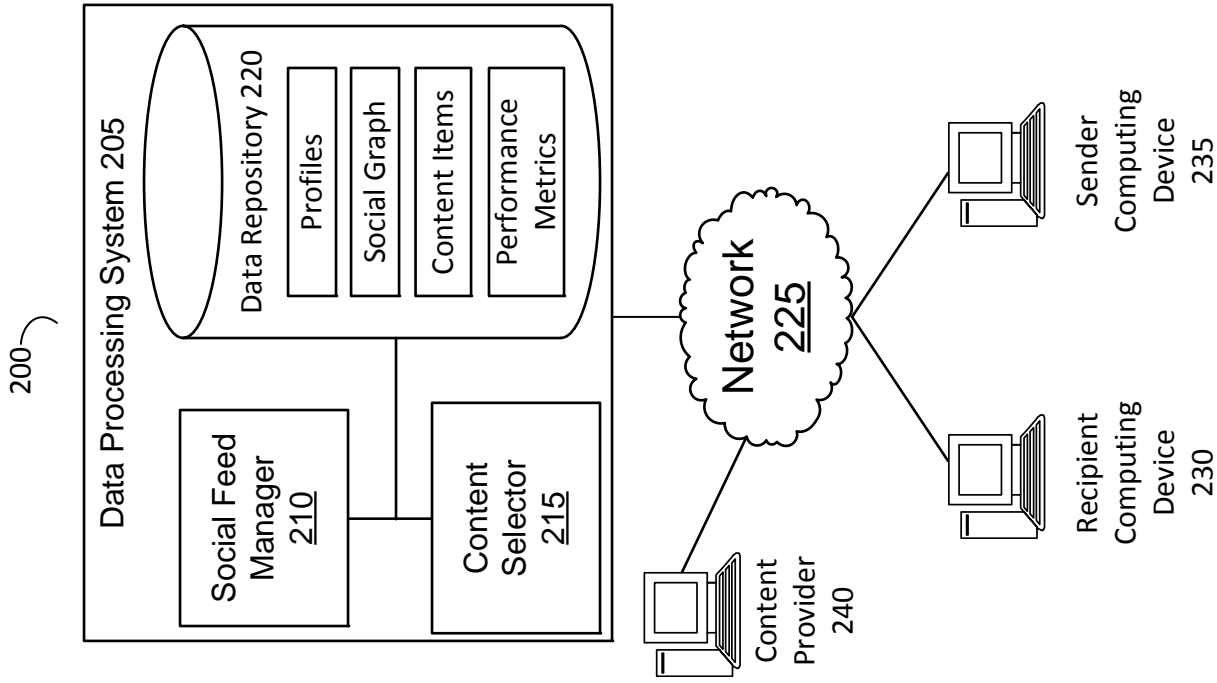


FIG. 2

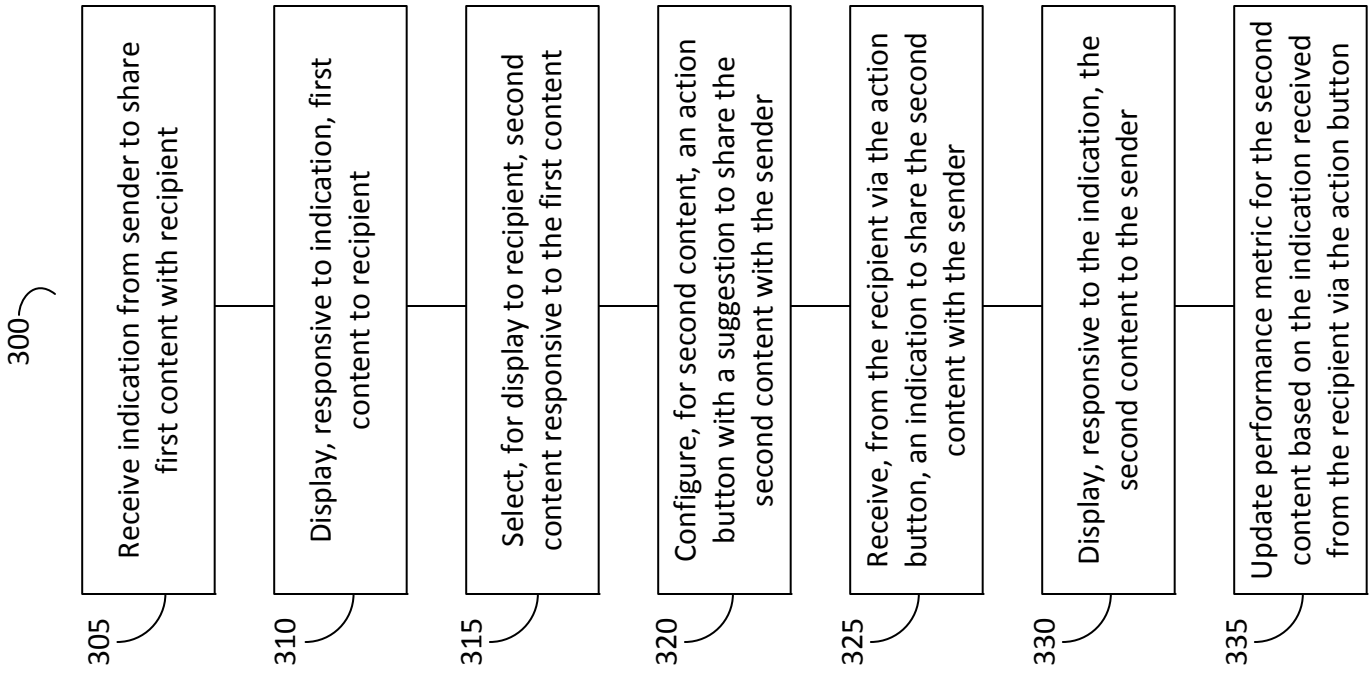


FIG. 3