

CLAIMS

1. A computer-implemented method for targeted information display based on historical user behavior, the method comprising:

determining a direction of scrolling for a graphical user interface of a client device, the graphical user interface having a plurality of display locations arranged in an order, wherein each display location of the plurality of display locations occupies a corresponding position in the graphical user interface;

determining a source display location of the plurality of display locations as a most recent display location to enter a display area of the client device in accordance with the direction of scrolling;

receiving an information acquisition request sent by the client device, wherein the information acquisition request comprises an identifier of the source display location of the plurality of display locations and a user identifier of a user that requests to obtain information;

identifying a display location trajectory diagram that corresponds to the user identifier, wherein an order in which the user historically browses two or more of the plurality of display locations is recorded in the display location trajectory diagram;

determining a target display location of the plurality of display locations based on the display location trajectory diagram, the target display location being associated with the source display location and being noncontiguous with the source display location in the graphical user interface, wherein the target display location is a predicted location that is likely to be browsed by the user and is not concurrently displayed with the source display location;

identifying a user preference diagram that (i) corresponds to the user identifier and (ii) indicates information types in each display location historically tapped by the user;

identifying one or more information types for the target display location based on querying the user preference diagram;

determining an information type of a highest priority as information to be sent;

retrieving, from an information base, target information of the information type with the highest priority that corresponds to the target display location by skipping neighboring information corresponding to all neighboring locations that are between the target display location and the source display location on the graphical user interface;

transmitting the target information to the client device that corresponds to the user identifier for display in the target display location; and

displaying, on the client device, the transmitted target information in the target display location.

2. The computer-implemented method of claim 1, wherein the display location trajectory diagram includes display location data uploaded by the client device and representing display locations historically browsed by the user, wherein the display location data comprises a user identifier, display location identifiers, and a timestamp, and wherein display locations that correspond to the display location identifiers in the display location data are associated with the user identifier in the display location data in order of the timestamp.

3. The computer-implemented method of claim 1, wherein identifying the display location trajectory diagram comprises:

identifying the display location trajectory diagram for a target display location associated with the source display location and after the source display location;

determining that there is more than one target display location;

in response to determining that there is more than one target display location, retrieving a priority of each target display location; and

determining a target display location with a highest priority as a final target display location.

4. The computer-implemented method of claim 3, wherein the priority of each of the target display locations is based on a number of times the user has browsed each of the target display locations.

5. The computer-implemented method of claim 1, wherein transmitting the target information to the client device that corresponds to the user identifier for display in the target display location comprises:

pushing information of an identified information type to the target display location in the client device that corresponds to the user identifier.

6. The computer-implemented method of claim 1, wherein the user preference diagram comprises information data uploaded by the client device historically tapped by the user, wherein the information data comprises a user identifier, a display location identifier, and an information type, wherein the user preference diagram associates the display location identifier with the information type in the information data with the user identifier in the information data.

7. The computer-implemented method of claim 1, wherein querying the user preference diagram comprises:

determining whether the target display location is not identified in the user preference

diagram based on the target display location; and

in response to determining that the target display location is not identified in the user preference diagram based on the target display location, randomly determining an information type as the information type that corresponds to the target display location.

8. The computer-implemented method of claim 5, wherein pushing information of the identified information type to the target display location in the client device that corresponds to the user identifier comprises:

determining that there is more than one target display location;

in response to determining that there is more than one target display location, retrieving a priority of each information type;

determining information of an information type with a highest priority as information to be sent; and

pushing the information to be sent to the more than one target display location in the client device that corresponds to the user identifier.

9. The computer-implemented method of claim 8, wherein the priority of each information type is determined based on a number of uploads associated with each information type.

10. A non-transitory, computer-readable medium storing one or more instructions executable by a computer system to perform operations comprising:

determining a direction of scrolling for a graphical user interface of a client device, the graphical user interface having a plurality of display locations arranged in an order, wherein each display location of the plurality of display locations occupies a corresponding position in the graphical user interface;

determining a source display location of the plurality of display locations as a most recent display location to enter a display area of the client device in accordance with the direction of scrolling;

receiving an information acquisition request sent by the client device, wherein the information acquisition request comprises an identifier of the source display location of the plurality of display locations and a user identifier of a user that requests to obtain information;

identifying a display location trajectory diagram that corresponds to the user identifier, wherein an order in which the user historically browses two or more of the plurality of display locations is recorded in the display location trajectory diagram;

determining a target display location of the plurality of display locations based on the display location trajectory diagram, the target display location being associated with the source display location and being noncontiguous with the source display location in the graphical user interface, wherein the target display location is a predicted location that is likely to be browsed by the user and is not concurrently displayed with the source display location;

identifying a user preference diagram that (i) corresponds to the user identifier and (ii) indicates information types in each display location historically tapped by the user;

identifying one or more information types for the target display location based on querying the user preference diagram;

determining an information type of a highest priority as information to be sent;

retrieving, from an information base, target information of the information type with the highest priority that corresponds to the target display location by skipping neighboring information corresponding to all neighboring locations that are between the target display location and the source display location on the graphical user interface;

transmitting the target information to the client device that corresponds to the user identifier for display in the target display location; and

displaying, on the client device, the transmitted target information in the target display location.

11. The non-transitory, computer-readable medium of claim 10, wherein the display location trajectory diagram includes display location data uploaded by the client device and representing display locations historically browsed by the user, wherein the display location data comprises a user identifier, display location identifiers, and a timestamp, and wherein display locations that correspond to the display location identifiers in the display location data are associated with the user identifier in the display location data in order of the timestamp.

12. The non-transitory, computer-readable medium of claim 10, wherein identifying the display location trajectory diagram comprises:

identifying the display location trajectory diagram for a target display location associated with the source display location and after the source display location;

determining that there is more than one target display location;

in response to determining that there is more than one target display location, retrieving a priority of each target display location; and

determining a target display location with a highest priority as a final target display location.

13. The non-transitory, computer-readable medium of claim 12, wherein the priority of each of the target display locations is based on a number of times the user has browsed each of the target display locations.

14. The non-transitory, computer-readable medium of claim 10, wherein transmitting the target information to the client device that corresponds to the user identifier for display in the target display location comprises:

pushing information of an identified information type to the target display location in the client device that corresponds to the user identifier.

15. The non-transitory, computer-readable medium of claim 10, wherein the user preference diagram comprises information data uploaded by the client device historically tapped by the user, wherein the information data comprises a user identifier, a display location identifier, and an information type, wherein the user preference diagram associates the display location identifier with the information type in the information data with the user identifier in the information data.

16. The non-transitory, computer-readable medium of claim 10, wherein querying the user preference diagram comprises:

determining whether the target display location is not identified in the user preference diagram based on the target display location; and

in response to determining that the target display location is not identified in the user preference diagram based on the target display location, randomly determining an information type as the information type that corresponds to the target display location.

17. The non-transitory, computer-readable medium of claim 14, wherein pushing information of the identified information type to the target display location in the client device that corresponds to the user identifier comprises:

determining that there is more than one target display location;

in response to determining that there is more than one target display location, retrieving a priority of each information type;

determining information of an information type with a highest priority as information to be sent; and

pushing the information to be sent to the more than one target display location in the client device that corresponds to the user identifier.

18. A computer-implemented system, comprising:

one or more computers; and one or more computer memory devices interoperably coupled with the one or more computers and having tangible, non-transitory, machine-readable media storing one or more instructions that, when executed by the one or more computers, perform one or more operations comprising:

determining a direction of scrolling for a graphical user interface of a client device, the graphical user interface having a plurality of display locations arranged in an order, wherein each display location of the plurality of display locations occupies a corresponding position in the graphical user interface;

determining a source display location of the plurality of display locations as a most recent display location to enter a display area of the client device in accordance with the direction of scrolling;

receiving an information acquisition request sent by the client device, wherein the information acquisition request comprises an identifier of the source display location of the plurality of display locations and a user identifier of a user that requests to obtain information;

identifying a display location trajectory diagram that corresponds to the user identifier, wherein an order in which the user historically browses two or more of the plurality of display locations is recorded in the display location trajectory diagram;

determining a target display location of the plurality of display locations based on the display location trajectory diagram, the target display location being associated with the source display location and being noncontiguous with the source display location in the graphical user interface, wherein the target display location is a predicted location that is likely to be browsed by the user and is not concurrently displayed with the source display location;

identifying a user preference diagram that (i) corresponds to the user identifier, and (ii) indicates information types in each display location historically tapped by the user;

identifying one or more information types for the target display location based on querying the user preference diagram;

determining an information type of a highest priority as information to be sent;

retrieving, from an information base, target information of the information type with the highest priority that corresponds to the target display location by skipping neighboring information corresponding to all neighboring locations that are between the target display location and the source display location on the graphical user interface;

transmitting the target information to the client device that corresponds to the user identifier for display in the target display location; and

displaying, on the client device, the transmitted target information in the target display location.