[0004] Thus, there is a need for a technical solution to provide more accurate targeting of offers for consumer distribution via real-time optimization while maintaining consumer privacy and security.

SUMMARY

[0005] The present disclosure provides a description of systems and methods for ranking of offers for consumer distribution.

[0006] A computer-implemented method for real-time ranking of offers for consumer distribution includes: storing, in an offer database of a processing server that does not possess personally-identifiable information (PII), a plurality of offer data entries, wherein each offer data entry includes data related to an offer including at least (i) an offer identifier (ii) offer data, (iii) a target geographic location, wherein (a) said offer is a coupon offering discounts on a particular product or service and (b) said target geographic location specifies a predetermined distance from a location whereat the respective offer is redeemable in which a computing device of a related consumer must be located to receive the respective offer; storing, in a consumer database of the processing server, a plurality of consumer profiles, wherein each consumer profile includes data including at least a consumer identifier and one or more consumer characteristics, wherein personally-identifiable information (PII) of consumers associated with each consumer profile is encrypted to render said PII unidentifiable, said encryption mode being a one-way encryption, and wherein said processing server stores the one-way encrypted PII and cannot decrypt said one-way encrypted PII; storing, in a distribution database of the processing server, a plurality of distribution data entries, wherein each distribution data entry includes data related to an offer previously distributed to the related consumer including at least an offer identifier, offer data, and an indication of at least one of: receipt, viewing, and acceptance of the offer by the related consumer; electronically receiving, by a receiving device of the processing server, from the computing device of the related consumer, a geographic location in which the computing device is located; in response to receiving the geographic location from the computing device, identifying, by a processing device of the processing server, a ranking of the plurality of offer data entries stored in the offer database based on (i) the offer data included in a respective offer data entry, (ii) the one or more consumer characteristics included in a respective consumer profile, (iii) the data,

stored in each of the plurality of distribution data entries stored in the distribution database, relating to an offer previously distributed to the consumer, (iv) the indication of at least one of: receipt, viewing, and acceptance of the previously distributed offer by the consumer included in each of the plurality of distribution data entries stored in the distribution database, (v) the target location associated with the offer to be distributed, and (vi) the geographic location received from the computing device associated with the related consumer; and transmitting, by a transmitting device of the processing server, the offer data included in at least one of the plurality of offer data entries based on the identified rank to the computing device associated with the related consumer.

[0007] A computer-implemented method for ranking offers for consumer distribution includes: storing, in an offer database of a processing server that does not store personally-identifiable information (PII), a plurality of offer data entries, wherein each offer data entry includes data related to an offer including at least (i) an offer identifier, (ii) offer data, (iii) a target geographic location, wherein (a) said offer is a coupon offering discounts on a particular product or service and (b) said target geographic location specifies a predetermined distance from a location whereat the respective offer is redeemable in which a computing device of a related consumer must be located to receive the respective offer; storing, in a consumer database of the processing server, a plurality of consumer profiles, wherein each consumer profile includes consumer data including at least a consumer identifier and one or more consumer characteristics, wherein personally-identifiable information (PII) of consumers associated with each consumer profile is encrypted to render said PII unidentifiable, said encryption mode being a one-way encryption, and wherein said processing server stores the one-way encrypted PII and cannot decrypt said one-way encrypted PII; storing, in a distribution database of the processing server, a plurality of distribution data entries, wherein each distribution data entry includes data related to an offer previously distributed to the related

consumer including at least an offer identifier, offer data, and an indication of at least one of: receipt, viewing, and acceptance of the offer by the related consumer; receiving, by a receiving device of the processing server, from the computing device of the related consumer, a geographic location in which the computing device is located; in response to receiving the geographic location from the computing device, generating, by a processing device of the processing server, a scoring model configured to score an offer to be distributed to the related consumer based on (i) the one or more consumer characteristics included in a respective consumer profile, (ii) data, stored in each of the plurality of distribution data entries stored in the distribution database, relating to an offer previously distributed to the consumer, (iii) the indication of at least one of: receipt, viewing, and acceptance of the previously distributed offer by the consumer included in each distribution data entry of the plurality of distribution data entries, (iv) the offer data associated with the offer to be distributed, (v) the target location associated with the offer to be distributed, and (vi) the geographic location received from the computing device associated with the related consumer; identifying, by the processing device of the processing server, a score for each respective offer data entry by applying the generated scoring model to each offer data entry of the plurality of offer data entries; identifying, by the processing device of the processing server, at least one offer data entry for distribution based on the identified score; and transmitting, by a transmitting device of the processing server, the offer data included in each of the identified at least one offer data entry to a computing device associated with the related consumer.

[0008] A system for real-time ranking of offers for consumer distribution includes an offer database of a processing server that does not possess personally identifiable information (PII), a consumer database of the processing server, a distribution database of the processing server, a receiving device of the processing server, a processing device of the processing server, and a transmitting device of the processing server. The offer database is configured to store a plurality of offer data entries, wherein each offer data entry includes data related to an offer including at least (i) an offer identifier, (ii) offer data, and (iii) a target geographic

location, wherein (a) said offer is a coupon offering discounts on a particular product or service and (b) said target geographic location specifies a predetermined distance from a location whereat the respective offer is redeemable in which a computing device of a related consumer must be located to receive the respective offer. The consumer database is configured to store a plurality of consumer profiles, wherein each consumer profile includes consumer data including at least a consumer identifier and one or more consumer characteristics, wherein personally-identifiable information (PII) of consumers associated with each consumer profile is encrypted to render said PII unidentifiable, said encryption mode being a one-way encryption, and wherein said processing server stores the one-way encrypted PII and cannot decrypt said one-way encrypted PII. The distribution database is configured to store a plurality of distribution data entries, wherein each distribution data entry includes data related to an offer previously distributed to the related consumer including at least an offer identifier, offer data, and an indication of at least one of: receipt, viewing, and acceptance of the offer by the related consumer. The receiving device is configured to electronically receive, from the computing device of the related consumer, a geographic location in which the computing device is located. The processing device is configured to identify, in response to receiving the geographic location from the computing device, a ranking of the plurality of offer data entries stored in the offer database based on (i) the offer data included in each respective offer data entry, (ii) the one or more consumer characteristics included in a respective consumer profile, (iii) the offer data, stored in each of the plurality of distribution data entries stored in the distribution database, relating to an offer previously distributed to the consumer, (iv) the indication of at least one of: receipt, viewing, and acceptance of the previously distributed offer by the consumer included in each of the plurality of distribution data entries stored in the distribution database, (v) the target location associated with the offer to be distributed, and (vi) the geographic location received from the computing device associated with the related consumer. The transmitting device is configured to transmit the offer data included in at least one of the plurality of offer data entries based on the identified rank to a computing device associated with the related consumer.

[0009] A system for ranking offers for consumer distribution includes an offer database of a processing server that does not store personally-identifiable information (PII), a consumer database of the processing server, a distribution database of the processing server, a receiving device of the processing server, a processing device of the processing server, and a transmitting device of the processing server. The offer database is configured to store a plurality of offer data entries, wherein each offer data entry includes data related to an offer including at least (i) an offer identifier, (ii) offer data, (iii) a target geographic location, wherein (a) said offer is a coupon offering discounts on a particular product or service and (b) said target geographic location specifies a predetermined distance from a location whereat the respective offer is redeemable in which a computing device of a related consumer must be located to receive the respective offer. The consumer database is configured to store a plurality of consumer profiles, wherein each consumer profile includes consumer data including at least a consumer identifier and one or more consumer characteristics, wherein personally-identifiable information (PII) of consumers associated with each consumer profile is encrypted to render said PII unidentifiable, said encryption mode being a one-way encryption, and wherein said processing server stores the one-way encrypted PII and cannot decrypt said one-way encrypted PII. The distribution database is configured to store a plurality of distribution data entries, wherein each distribution data entry includes data related to an offer previously distributed to the related consumer including at least an offer identifier, offer data, and an indication of at least one of: receipt, viewing, and acceptance of the offer by the related consumer. The receiving device is configured to electronically receive, from the computing device of the related consumer, a geographic location in which the computing device is located. The processing device is configured to: generate, in response to receiving the geographic location from the computing device, a scoring model configured to score an offer to be distributed to the related consumer based on (i) the one or more consumer characteristics included in a respective consumer profile, (ii) data, stored in each of the plurality of distribution data entries stored in the distribution database, relating to an offer previously distributed to the consumer, (iii) the indication of at least one of: receipt, viewing, and acceptance of the previously distributed offer by the consumer included in each distribution data entry of the plurality of distribution data entries, (iv) the offer data associated with the offer to be distributed, (v) the target location associated with the offer to be distributed, and (vi) the geographic location

received from the computing device associated with the related consumer; identify a score for each respective offer data entry by applying the generated scoring model to each offer data entry of the plurality of offer data entries; and identify at least one offer data entry for distribution based on the identified score. The transmitting device is configured to transmit the offer data included in each of the identified at least one offer data entry to the computing device associated with the related consumer.

BRIEF DESCRIPTION OF THE DRAWING FIGURES

[0010] The scope of the present disclosure is best understood from the following detailed description of exemplary embodiments when read in conjunction with the accompanying drawings. Included in the drawings are the following figures:

[0011] FIG. 1 is a high level architecture illustrating a system for real-time ranking of offers for consumer distribution in accordance with exemplary embodiments.

[0012] FIG. 2 is a block diagram illustrating the processing server of FIG. 1 for the real-time ranking and scoring for offers and the distribution thereof to consumers in accordance with exemplary embodiments.

WHAT IS CLAIMED IS:

1. A computer-implemented method for real-time ranking of offers for consumer distribution, comprising:

storing, in an offer database of a processing server that does not possess personally-identifiable information (PII), a plurality of offer data entries, wherein each offer data entry includes data related to an offer including at least (i) an offer identifier, (ii) offer data, (iii) a target geographic location, wherein (a) said offer is a coupon offering discounts on a particular product or service and (b) said target geographic location specifies a predetermined distance from a location whereat the respective offer is redeemable in which a computing device of a related consumer must be located to receive the respective offer;

storing, in a consumer database of the processing server, a plurality of consumer profiles, wherein each consumer profile includes data including at least a consumer identifier and one or more consumer characteristics, wherein personally-identifiable information (PII) of consumers associated with each consumer profile is encrypted to render said PII unidentifiable, said encryption mode being a one-way encryption, and wherein said processing server stores the one-way encrypted PII and cannot decrypt said one-way encrypted PII;

storing, in a distribution database of the processing server, a plurality of distribution data entries, wherein each distribution data entry includes data related to an offer previously distributed to the related consumer including at least an offer identifier, offer data, and an indication of at least one of: receipt, viewing, and acceptance of the offer by the related consumer;

electronically receiving, by a receiving device of the processing server, from the computing device of the related consumer, a geographic location in which the computing device is located;

in response to receiving the geographic location from the computing device, identifying, by a processing device of the processing server, a ranking of the plurality of offer data entries stored in the offer database based on (i) the offer data included

in a respective offer data entry, (ii) the one or more consumer characteristics included in a respective consumer profile, (iii) the data, stored in each of the plurality of distribution data entries stored in the distribution database, relating to an offer previously distributed to the consumer, (iv) the indication of at least one of: receipt, viewing, and acceptance of the previously distributed offer by the consumer included in each of the plurality of distribution data entries stored in the distribution database, (v) the target location associated with the offer to be distributed, and (vi) the geographic location received from the computing device associated with the related consumer; and

transmitting, by a transmitting device of the processing server, the offer data included in at least one of the plurality of offer data entries based on the identified rank to the computing device associated with the related consumer.

2. The method of claim 1, further comprising:

receiving, by the receiving device, an indication of at least one of: receipt, viewing, and acceptance of the offer related to each of the at least one of the plurality of offer data entries transmitted to the computing device; and

adding, to the distribution database, a new distribution data entry corresponding to each offer transmitted to the computing device, including at least the offer identifier and offer data included in the corresponding offer data entry and the received indication of at least one of: receipt, viewing, and acceptance of the respective offer.

3. The method of claim 2, further comprising:

updating, by the processing device, the ranking of the plurality of offer data entries stored in the offer database based on the new distribution data entries added to the distribution database.

4. The method of claim 1, wherein the one or more consumer characteristics includes at least one of: social network data, geographic location data, demographic data, consumer preferences, transaction history, and offer redemption history associated with the related consumer.

5. The method of claim 1, wherein the offer data includes at least one of: offer name, offer description, discount amount, offer type, offer category, merchant name, merchant category, manufacturer name, manufacturer category, offer provider, product name, product description, start date, end date, offer quantity, and limitations on redemption.

6. A computer-implemented method for ranking offers for consumer distribution, comprising:

storing, in an offer database of a processing server that does not store personally-identifiable information (PII), a plurality of offer data entries, wherein each offer data entry includes data related to an offer including at least (i) an offer identifier, (ii) offer data, (iii) a target geographic location, wherein (a) said offer is a coupon offering discounts on a particular product or service and (b) said target geographic location specifies a predetermined distance from a location whereat the respective offer is redeemable in

which a computing device of a related consumer must be located to receive the respective offer;

storing, in a consumer database of the processing server, a plurality of consumer profiles, wherein each consumer profile includes consumer data including at least a consumer identifier and one or more consumer characteristics, wherein personally-identifiable information (PII) of consumers associated with each consumer profile is encrypted to render said PII unidentifiable, said encryption mode being a one-way encryption, and wherein said processing server stores the one-way encrypted PII and cannot decrypt said one-way encrypted PII,

storing, in a distribution database of the processing server, a plurality of distribution data entries, wherein each distribution data entry includes data related to an offer previously

distributed to the related consumer including at least an offer identifier, offer data, and an indication of at least one of: receipt, viewing, and acceptance of the offer by the related consumer;

receiving, by a receiving device of the processing server, from the computing device of the related consumer, a geographic location in which the computing device is located;

in response to receiving the geographic location from the computing device, generating, by a processing device of the processing server, a scoring model configured to score an offer to be distributed to the related consumer based on (i) the one or more consumer characteristics included in a respective consumer profile, (ii) data, stored in each of the plurality of distribution data entries stored in the distribution database, relating to an offer previously distributed to the consumer, (iii) the indication of at least one of: receipt, viewing, and acceptance of the previously distributed offer by the consumer included in each distribution data entry of the plurality of distribution data entries, (iv) the offer data associated with the offer to be distributed, (v) the target location associated with the offer to be distributed, and (vi) the geographic location received from the computing device associated with the related consumer;

identifying, by the processing device of the processing server, a score for each respective offer data entry by applying the generated scoring model to each offer data entry of the plurality of offer data entries;

identifying, by the processing device of the processing server, at least one offer data entry for distribution based on the identified score; and

transmitting, by a transmitting device of the processing server, the offer data included in each of the identified at least one offer data entry to a computing device associated with the related consumer.

7. The method of claim 6, further comprising:

receiving, by the receiving device, an indication of at least one of: receipt, viewing, and acceptance of the offer related to each of the identified at least one offer data entry; and

adding, to the distribution database, a new distribution data entry corresponding to each offer transmitted to the computing device, including at least the offer identifier and offer data included in the corresponding offer data entry and the received indication of at least one of: receipt, viewing, and acceptance of the respective offer.

8. The method of claim 7, further comprising:

updating, by the processing device, the scoring model based on the new distribution data entries added to the distribution database.

9. The method of claim 6, wherein the one or more consumer characteristics includes at least one of: social network data, geographic location

data, demographic data, consumer preferences, transaction history, and offer redemption history associated with the related consumer.

10. The method of claim 6, wherein the offer data includes at least one of: offer name, offer description, discount amount, offer type, offer category, merchant name, merchant category, manufacturer name, manufacturer category, offer provider, product name, product description, start date, end date, offer quantity, and limitations on redemption.

11. A system for real-time ranking of offers for consumer distribution, comprising:

an offer database of a processing server that does not possess personally identifiable information (PII),configured to store a plurality of offer data entries, wherein each offer data entry includes data related to an offer including at least (i) an offer identifier, (ii) offer data, and (iii) a target geographic location, wherein (a) said offer is a coupon offering discounts on a particular product or service and (b) said target geographic location specifies a predetermined distance from a location whereat the respective offer is redeemable in which a computing device of a related consumer must be located to receive the respective offer;

a consumer database of the processing server configured to store a plurality of consumer profiles, wherein each consumer profile includes consumer data including at least a consumer identifier and one or more consumer characteristics, wherein personally-identifiable information (PII) of consumers associated with each consumer profile is encrypted to render said PII unidentifiable, said encryption mode being a one-way encryption, and wherein said

processing server stores the one-way encrypted PII and cannot decrypt said one-way encrypted PII;

a distribution database of the processing server configured to store a plurality of distribution data entries, wherein each distribution data entry includes data related to an offer previously distributed to the related consumer including at least an offer identifier, offer data, and an indication of at least one of: receipt, viewing, and acceptance of the offer by the related consumer;

a receiving device, of the processing server, configured to electronically receive, from the computing device of the related consumer, a geographic location in which the computing device is located;

a processing device of the processing server configured to identify, in response to receiving the geographic location from the computing device, a ranking of the plurality of offer data entries stored in the offer database based on (i) the offer data included in each respective offer data entry, (ii) the one or more consumer characteristics included in a respective consumer profile, (iii) the offer data, stored in each of the plurality of distribution data entries stored in the distribution database, relating to an offer previously distributed to the consumer, (iv) the indication of at least one of: receipt, viewing, and acceptance of the previously distributed offer by the consumer included in each of the plurality of distribution data entries stored in the distribution database, (v) the target location associated with the offer to be distributed, and (vi) the geographic location received from the computing device associated with the related consumer

; and

a transmitting device of the processing server configured to transmit the offer data included in at least one of the plurality of offer data entries based on the identified rank to the computing device associated with the related consumer.

12. The system of claim 11, wherein

the receiving device is further configured to receive an indication of at least one of: receipt, viewing, and acceptance of the offer related to each of the at least one of the plurality of offer data entries transmitted to the computing device, wherein

the processing device is further configured to add, to the distribution database, a new distribution data entry corresponding to each offer transmitted to the computing device, including at least the offer identifier and offer data included in the corresponding offer data entry and the received indication of at least one of: receipt, viewing, and acceptance of the respective offer.

13. The system of claim 12, wherein the processing device is further configured to update the ranking of the plurality of offer data entries stored in the offer database based on the new distribution data entries added to the distribution database.

14. The system of claim 11, wherein the one or more consumer characteristics includes at least one of: social network data, geographic location data, demographic data, consumer preferences, transaction history, and offer redemption history associated with the related consumer.

15. The system of claim 11, wherein the offer data includes at least one of: offer name, offer description, discount amount, offer type, offer category, merchant name, merchant category, manufacturer name, manufacturer category, offer provider, product name, product description, start date, end date, offer quantity, and limitations on redemption.

16. A system for ranking offers for consumer distribution, comprising:

an offer database of a processing server that does not store personally-identifiable information (PII) configured to store a plurality of offer data entries, wherein each offer data entry includes data related to an offer including at least (i) an offer identifier, (ii) offer data, (iii) a target geographic location, wherein (a) said offer is a coupon offering discounts on a particular product or service and (b) said target geographic location specifies a predetermined distance from a location whereat the respective offer is redeemable in which a computing device of a related consumer must be located to receive the respective offer;

a consumer database of the processing server configured to store a plurality of consumer profiles, wherein each consumer profile includes consumer data including at least a consumer identifier and one or more consumer characteristics, wherein personally-identifiable information (PII) of consumers associated with each consumer profile is encrypted to render said PII unidentifiable, said encryption mode being a one-way encryption, and wherein said processing server stores the one-way encrypted PII and cannot decrypt said one-way encrypted PII;

a distribution database of the processing server configured to store a plurality of distribution data entries, wherein each distribution data entry includes data related to an offer previously distributed to the related consumer including at least an offer identifier, offer data, and an indication of at least one of: receipt, viewing, and acceptance of the offer by the related consumer;

a receiving device, of the processing server, configured to electronically receive, from the computing device of the related consumer, a geographic location in which the computing device is located;

a processing device of the processing server configured to

generate, in response to receiving the geographic location from the computing device, a scoring model configured to score an offer to be distributed to the related consumer based on (i) the one or more consumer characteristics included in a respective consumer profile, (ii) data, stored in each of the plurality of distribution data entries stored in the distribution database, relating to an offer previously distributed to the consumer, (iii) the indication of at least one of: receipt, viewing, and acceptance of the previously distributed offer by the consumer included in each distribution data entry of the plurality of distribution data entries, (iv) the offer data associated with the offer to be distributed, (v) the target location associated with the offer to be distributed, and (vi) the geographic location received from the computing device associated with the related consumer,

identify a score for each respective offer data entry by applying the generated scoring model to each offer data entry of the plurality of offer data entries, and

identify at least one offer data entry for distribution based on the identified score; and

a transmitting device of the processing server configured to transmit the offer data included in each of the identified at least one offer data entry to the computing device associated with the related consumer.

17. The system of claim 16, wherein

the receiving device is further configured to receive an indication of at least one of: receipt, viewing, and acceptance of the offer related to each of the identified at least one offer data entry, wherein

the processing device is further configured to add, to the distribution database, a new distribution data entry corresponding to each offer transmitted to the computing device, including at least the offer identifier and offer data included in the corresponding offer data entry and the received indication of at least one of: receipt, viewing, and acceptance of the respective offer.

18. The system of claim 17, wherein the processing device is further configured to update the scoring model based on the new distribution data entries added to the distribution database.

19. The system of claim 16, wherein the one or more consumer characteristics includes at least one of: social network data, geographic location data, demographic data, consumer preferences, transaction history, and offer redemption history associated with the related consumer.

20. The system of claim 16, wherein the offer data includes at least one of: offer name, offer description, discount amount, offer type, offer category, merchant name, merchant category, manufacturer name, manufacturer category, offer provider, product name, product description, start date, end date, offer quantity, and limitations on redemption.