likelihood that the user will get an accommodation through the accommodation reservation system.

SUMMARY

[0004a] According to a first aspect of the present invention, there is provided a computer implemented method, comprising: receiving, by the computer, a search query from a guest for accommodation, the search query comprising a geographical location and a date range; identifying, by the computer, one or more accommodations in the geographical location; for each of the one or more identified accommodations, determining by the computer, a probability of booking, wherein the probability of booking is a measure of a likeliness that the guest will be able to book the accommodation of the date range specified in the search query; ranking the one or more identified accommodations based at least on the probability of booking; and providing the ranked accommodations to the guest.

[0004b] According to a second aspect of the present invention, there is provided an accommodation reservation system, comprising: a computer processor; a search module executed by the processor and configured to: receive a search query from a guest, the search query comprising a geographical location and a date range; identify one or more accommodations based on the search query; for each of the one or more identified accommodations, determine a probability of booking, wherein the probability of booking is a measure of a likeliness that the guest will be able to book the accommodation of the date range specified in the search query; and rank the one or more identified accommodations based at least on a probability of booking.

[0004c] According to a third aspect of the present invention, there is provided a computer program product comprising a computer-readable storage medium containing computer program code for booking accommodation, the computer program code when executed by a processor causes the processor to: receive a search query from a guest, the search query comprising a geographical location and a date range; identify one or more accommodations based on the search query; for each of the one or more identified accommodations, determine a probability of booking, wherein the probability of booking is a measure of a likeliness that the guest will be able to book the accommodation of the date range specified in the search query; and rank the one or more identified accommodations based at least on a probability of booking;

[0005] An accommodation reservation system can predict the availability of an accommodation for a given period of time, based on the accommodation's current listed availability and the past behavior of the accommodation's host in updating the availability information for the accommodation. In one embodiment, the accommodation reservation system uses a machine learned predictive model, herein called an availability model, to predict the availability of an accommodation.

[0006] The accommodation reservation system can also estimate a probability that, provided an accommodation is available, the guest's request for accommodation is going to be accepted by the host. In one embodiment, the accommodation reservation systems uses another machine learned predictive model, herein called an acceptance model, to predict the likelihood of acceptance based on information about the guest, information about the trip, and the host past behavior in accepting or declining accommodation requests.

[0007] Embodiments of the invention can also use the availability model and the acceptance model to rank the listings returned in response to a search query. Given a set of accommodations that satisfy a user's request for accommodations, the accommodation reservation system ranks higher all the accommodations that a guest is most likely to be able to obtain or book, using a function of the outputs of the availability model and the acceptance model. Other embodiments use those models to filter the search result and only display the listing with an availability probability and/or acceptance probability larger than a threshold.

[0008] The features and advantages described in this summary and the following detailed description are not all-inclusive. Many additional features and advantages will be apparent to one of ordinary skill in the art in view of the drawings, specification, and claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] FIG. 1 is a system diagram of the accommodation reservation system, in accordance with an embodiment of the invention.

[0010] FIG. 2 is a block diagram illustrating the different modules inside the accommodation reservation system, in accordance with an embodiment of the invention.

[0011] FIG. 3 is an illustration of the class diagram of the accommodation reservation system, in accordance with an embodiment of the invention.