System Configured To Identify And Filter Undesirable Vehicle Booking Requests And Method Thereof

Technical Field

[0001] The present invention relates to a system configured to identify and filter undesirable vehicle booking requests and method thereof.

Background

[0002] Vehicles for hire, e.g. taxis/cabs, privately own vehicles, are commonly seen in most countries. Such vehicles may be flagged down by a passenger along the road or booked by a passenger over a communication device, e.g. phone.

[0003] To pre-booked a vehicle, e.g. taxi, a passenger would contact, usually, a company, e.g. taxi company, that manages the booking of a plurality of taxis and a taxi may be dispatched to the passenger.

[0004] In some countries, the passenger may dial in to the taxi company using a phone and either speak to a telephone operator and/or a machine operated booking system. By booking a taxi over the phone, the passenger relays a booking request to the taxi company. A manual or automatic system may be used to broadcast the booking request to the taxis. Taxis that are in the proximity of the booking request, i.e. the location of the passenger, may respond to the taxi company to bid for the booking request, often via a radio communication system. From the plurality of biddings submitted by the taxis, the taxi company may manually select the taxi to assign the booking request to. Often the selection process is performed at the discretion and experience of the operator and the taxi selected may not be the taxi that is closest to the passenger. Such a system may not be efficient and is unable to provide optimal service to the passenger.

[0005] In some other countries, a Global Positioning System (GPS) or General Packet Radio Service (GPRS) system may be used to detect the location of taxis. For such a taxi location system, the passenger may dial in to the taxi company to submit a booking request which consist of the pick-up location of the passenger. The taxi location system is able to locate taxis in close proximity to the passenger and automatically broadcast the booking request to taxis in the vicinity of the passenger. The booking request, which usually includes information on the pick-up and drop-off location, may be displayed on devices installed in

the taxis. Taxi drivers would have to look at the screen to read the booking request before they decide if they are able to bid for the booking request.

[0006] Often, the taxi drivers would need to read the booking requests while driving. For systems which display a list of booking requests on the screen, the taxi driver would need to spend time looking at the screen. Also, often, the booking requests on the screen may not be of interest or relevant to the taxi driver. As such, the taxi driver would have to spend time reading the booking request regardless the relevancy of the booking request so that they would not miss out on any relevant booking request. It would be clear that the longer the taxi drivers take their eyes off the road, the higher the probability of the taxi meeting with an accident on the road.

[0007] The systems and methods disclosed herein may alleviate the aforementioned problems.

Summary

[0007A] The invention is defined in the independent claims. Some optional features of the invention are defined in the dependent claims.

[0008] Accordingly to various embodiments, a vehicle booking system may be provided. The vehicle booking system includes a server configured to communicate with a plurality of vehicles, such that the server is configured to receive and store a plurality of vehicle booking requests in a vehicle booking requests database; and such that the server is configured to identify and filter a plurality of undesirable vehicle booking requests from the plurality of vehicle booking requests to obtain a plurality of desirable vehicle booking requests and transmit the plurality of desirable vehicle booking requests to the plurality of vehicles.

[0009] Accordingly to various embodiments, the plurality of undesirable vehicle booking requests may be identified based on booking request data of the plurality of vehicle booking requests.

[0010] Accordingly to various embodiments, the booking request data may include journey data, wherein the plurality of undesirable vehicle booking requests are identified based on the journey data of the plurality of vehicle booking requests.

[0011] Accordingly to various embodiments, the journey data may include pick-up location and/or drop-off location of a user.

transmit the plurality of desirable vehicle booking requests to the plurality of excluded vehicles when the plurality of selected vehicles are less than the specified number.

[0029] Accordingly to various embodiments, a method for booking a plurality of vehicles may be provided, the method includes receiving and storing a plurality of vehicle booking requests in a vehicle booking requests database, identifying and filtering a plurality of undesirable vehicle booking requests from the plurality of vehicle booking requests to obtain a plurality of desirable vehicle booking' requests and transmitting the plurality of desirable vehicle booking requests to a plurality of vehicles.

[0030] Accordingly to various embodiments, the plurality of undesirable vehicle booking requests may be identified based on booking request data of the plurality of vehicle booking requests.

[0031] Accordingly to various embodiments, the booking request data may include journey data, such that the plurality of undesirable vehicle booking requests are identified based on the journey data of the plurality of vehicle booking requests.

[0032] Accordingly to various embodiments, the journey data may include pick-up location and/or drop-off location.

[0033] Accordingly to various embodiments, the booking request data may include user data, such that the plurality of undesirable vehicle booking requests are identified based on user data of the plurality of vehicle booking requests.

[0034] Accordingly to various embodiments, the user data of each of the plurality of vehicle booking requests may include a user identification key.

[0035] Accordingly to various embodiments, the plurality of undesirable vehicle booking requests may include a duplicate vehicle booking request of an original vehicle booking request.

[0036] Accordingly to various embodiments, the plurality of undesirable vehicle booking requests may include a duplicate vehicle booking request of an original vehicle booking request.

[0045] Accordingly to various embodiments, ignoring the plurality of desirable booking requests may include not submitting the bidding request for the at least one of the plurality of desirable booking requests.

[0046] Accordingly to various embodiments, the method may further include transmitting the at least one of the plurality of desirable vehicle booking requests to the ignoring vehicle after a specified period of block out time.

[0047] Accordingly to various embodiments, the plurality of excluded vehicles may include an occupied vehicle, such that the occupied vehicle may include a vehicle having a passenger on board.

[0048] Accordingly to various embodiments, the occupied vehicle is occupied when a distance travelled by the occupied vehicle from a pick-up location of the passenger is shorter than a specified proportion of the calculated distance between the pick-up location and a drop-off location of the passenger.

[0049] Accordingly to various embodiments, the occupied vehicle is occupied when a time period that the passenger is on board the occupied vehicle is shorter than a specified proportion of estimated travel time to travel from the pick-up location to the drop-off location of the passenger.

[0050] Accordingly to various embodiments, may further include maintaining a specified number of the plurality of selected vehicles, such that the plurality of desirable vehicle booking requests are transmitted to the plurality of excluded vehicles when the plurality of selected vehicles are less than the specified number.

[0051] A vehicle booking system and method thereof that may improve the relevancy and accuracy of the booking requests to the taxi driver may be provided. The system and method disclosed herein may improve the decision making process of the taxi drivers in the selection process of the plurality vehicle booking requests. In this way, the time required for the taxi drivers to read the screen would be reduced and hence the probability of meeting with an accident on the road would correspondingly be reduced.

[0052] Further, the present techniques may indirectly reduce the waiting time of a passenger as the time taken to assign a taxi to the passenger is reduced due to the increase in relevancy in

[0071] Plurality of vehicle booking devices 110 may be configured to receive user input from a plurality of users to book the plurality of vehicles 140. User input may include booking request data of each of the plurality of users. Plurality of users may enter booking request data into the plurality of vehicle booking devices 110. Booking request data may be entered via the user interface 112 of the vehicle booking device 110. Booking request data may include at least one of an identification key of a user, a pick-up location where the user may be picked up by at least one of the plurality of vehicles 140 and a drop-off location where the user may be dropped off by the at least one of the plurality of vehicles 140. When a booking request is made, the user may enter the identification key, the pick-up location and the drop-off location. Pick-up location of the plurality of users may be automatically obtained from the plurality of vehicle booking devices 110 using the location positioning module of the location of the vehicle booking device. Identification key of a user may be stored in each of the plurality of vehicle booking devices 110 and automatically be included in the booking request data when the plurality of vehicle booking requests are generated. Plurality of users may each obtain an identification key from the server when the plurality of users sign up for a booking account with the server. Pick-up location and the drop-off location may be coordinates of a country's coordinate system e.g. latitude and longitude.

[0072] Upon entering the booking request data into the plurality of vehicle booking devices 110, the plurality of vehicle booking devices 110 may generate the plurality of vehicle booking requests. Plurality of vehicle booking requests may be transmitted to the server 120.

[0073] Server 120 may be configured to identify the plurality of undesirable vehicle booking requests and the plurality of desirable vehicle booking requests from the plurality of vehicle booking requests. Server 120 may be configured to filter the undesirable vehicle booking requests from the plurality of vehicle booking requests. Server 120 may be configured to transmit the desirable vehicle booking requests to the plurality of vehicles 140. A undesirable vehicle booking request may be a vehicle booking request that is not transmitted to the plurality of vehicles. Desirable vehicle booking request is a vehicle booking request that would be transmitted to the plurality of vehicles.

[0074] Undesirable vehicle booking requests may include a duplicate vehicle booking request of an original vehicle booking request. For the server 120 to identify undesirable vehicle booking requests, the server 120 may be configured to identify duplicated vehicle booking

Claims

1. A system configured to identify and filter undesirable vehicle booking requests, the system comprising:

a server configured to communicate with a plurality of vehicular devices of a corresponding plurality of vehicles, wherein the server is configured to receive and store a plurality of vehicle booking requests in a vehicle booking requests database;

wherein the server is configured to identify and filter a plurality of undesirable vehicle booking requests from the plurality of vehicle booking requests to obtain a plurality of desirable vehicle booking requests,

wherein the server is further configured to transmit the plurality of desirable vehicle booking requests to the plurality of vehicular devices and not transmit the undesirable vehicle booking requests to the plurality of vehicular devices, and

wherein the undesirable vehicle booking requests include a received vehicle booking request that is identified, by the server, as a duplicate of another received vehicle booking request.

2. The system of claim 1, wherein one or more of the following apply:

the server is configured for the plurality of undesirable vehicle booking requests to be identified based on booking request data of the plurality of vehicle booking requests;

the booking request data comprises journey data, and the server is configured for the plurality of undesirable vehicle booking requests to be identified based on the journey data of the plurality of vehicle booking requests;

and/or

the journey data comprises pick-up location and/or drop-off location of a user.

3. The system of claim 2, wherein the booking request data comprises user data, wherein the server is configured for the plurality of undesirable vehicle booking requests to be identified based on user data of the plurality of vehicle booking requests.

4. The system of claim 1, wherein one or more of the following apply:

the server is configured to identify the duplicate vehicle booking request as comprising the same pick-up location and/or drop-off location as the original vehicle booking request;

the server is configured to identify the duplicate vehicle booking request as comprising a same user identification key as the original vehicle booking request; and/or

the server is configured to identify the duplicate vehicle booking request and the original vehicle booking request as being made within a specified time period.

5. The system of claim 1, wherein the server is configured to identify a plurality of excluded vehicles from the plurality of vehicles to obtain a plurality of selected vehicles, and further configured for the plurality of desirable vehicle booking requests to be transmitted to the vehicular devices of the plurality of selected vehicles but not the vehicular devices of the plurality of excluded vehicles.

6. The system of claim 5, wherein one or more of the following apply:

the plurality of excluded vehicles comprises a rejecting vehicle, wherein the rejecting vehicle rejects at least one of the plurality of desirable vehicle booking requests, wherein the server is configured for the vehicular device of the rejecting vehicle to be excluded from receiving the at least one of the plurality of desirable vehicle booking requests; and/or

the plurality of excluded vehicles comprises an ignoring vehicle, wherein the ignoring vehicle ignores at least one of the plurality of desirable vehicle booking requests, wherein the server is configured for the vehicular device of the ignoring vehicle to be excluded from receiving the at least one of the plurality of desirable vehicle booking requests.

7. The system of claim 6, wherein one or more of the following apply:

the server is configured for the ignoring vehicle to be considered to ignore the at least one of the plurality of desirable booking requests when the ignoring vehicle ignores the at least one of the plurality of desirable booking requests beyond a specified time period from the time when the at least one of the plurality of desirable booking requests are transmitted to the vehicular device of the ignoring vehicle;

the server is configured for the transmission of the at least one of the plurality of desirable booking requests to the vehicular device of the ignoring vehicle to be terminated when the ignoring vehicle ignores the plurality of desirable booking requests beyond a specified number of times; and/or

the server is configured to transmit the at least one of the plurality of desirable vehicle booking requests to the vehicular device of the ignoring vehicle after a specified period of block out time.

8. The system of claim 5, wherein the plurality of excluded vehicles comprises an occupied vehicle, wherein the occupied vehicle comprises a vehicle having a passenger on board.

9. The system of claim 8, wherein one or more of the following apply:

the server is configured for the occupied vehicle to be determined occupied when a distance travelled by the occupied vehicle from a pick-up location of the passenger is shorter than a specified proportion of the calculated distance between the pick-up location and a drop-off location; and/or

the server is configured for the occupied vehicle to be determined occupied when a time period that the passenger is on board the occupied vehicle is shorter than a specified proportion of estimated travel time to travel from the pick-up location to the drop-off location.

10. The system of claim 5, wherein the server is configured to maintain a specified number of the plurality of selected vehicles, wherein the server is configured to transmit the plurality of desirable vehicle booking requests to the vehicular devices of the plurality of excluded vehicles when the plurality of selected vehicles are less than the specified number.

11. A method of identifying and filtering undesirable booking requests, the method comprising:

receiving and storing a plurality of vehicle booking requests in a vehicle booking requests database;

identifying and filtering a plurality of undesirable vehicle booking requests from the plurality of vehicle booking requests to obtain a plurality of desirable vehicle booking requests; and

transmitting the plurality of desirable vehicle booking requests to a plurality of vehicular devices and not transmitting the plurality of undesirable vehicle booking requests to the plurality of vehicular devices;

wherein the undesirable vehicle booking requests include a received vehicle booking request that is identified, by the server, as a duplicate of another received vehicle booking request.

12. The method of claim 11, wherein one or more of the following apply:

the plurality of undesirable vehicle booking requests are identified based on booking request data of the plurality of vehicle booking requests;

the booking request data comprises journey data, and the plurality of undesirable vehicle booking requests are identified based on the journey data of the plurality of vehicle booking requests;

and/or

the journey data comprises pick-up location and/or drop-off location.

13. The method of claim 12, wherein the booking request data comprises user data, wherein the plurality of undesirable vehicle booking requests are identified based on user data of the plurality of vehicle booking requests.

14. The method of claim 11, wherein one or more of the following apply:

the duplicate vehicle booking request comprises the same pick-up location and/or drop-off location as the original vehicle booking request;

the duplicate vehicle booking request comprises the same user identification key as the original vehicle booking request; and/or

the duplicate vehicle booking request and the original vehicle booking request are made within a specified time period.

15. The method of claim 11, further comprising identifying a plurality of excluded vehicles from the plurality of vehicles to obtain a plurality of selected vehicles, wherein the plurality of desirable vehicle booking requests are transmitted to the vehicular devices of the plurality of selected vehicles but not the vehicular devices of the plurality of excluded vehicles.

16. The method of claim 15, wherein one or more of the following apply:

the plurality of excluded vehicles comprises a rejecting vehicle, wherein the rejecting vehicle rejects at least one of the plurality of desirable vehicle booking requests, wherein the vehicular device of the rejecting vehicle is excluded from receiving the at least one of the plurality of desirable vehicle booking requests; and/or

the plurality of excluded vehicles comprises an ignoring vehicle, wherein the ignoring vehicle ignores the plurality of desirable booking requests, wherein the vehicular device of the ignoring vehicle is excluded from receiving the at least one of the plurality of desirable vehicle booking requests.

17. The method of claim 16, wherein one or more of the following apply:

the ignoring vehicle is considered to ignore the at least one of the plurality of desirable booking requests when the ignoring vehicle ignores the at least one of the plurality of desirable booking requests beyond a specified time period the time from when the at least one of the plurality of desirable booking requests are transmitted to the vehicular device of the ignoring vehicle;

the transmission of the at least one of the plurality of desirable booking requests to the vehicular device of the ignoring vehicle is terminated when the ignoring vehicle ignores the plurality of desirable booking requests beyond a specified number of times; and/or

the method further comprises transmitting the at least one of the plurality of desirable vehicle booking requests to the vehicular device of the ignoring vehicle after a specified period of block out time.

18. The method of claim 15, wherein the plurality of excluded vehicles comprises an occupied vehicle, wherein the occupied vehicle comprises a vehicle having a passenger on board.

19. The method of claim 18, wherein one or more of the following apply:

the occupied vehicle is determined to be occupied when a distance travelled by the occupied vehicle from a pick-up location of the passenger is shorter than a specified proportion of the calculated distance between the pick-up location and a drop-off location of the passenger; and/or

the occupied vehicle is determined to be occupied when a time period that the passenger is on board the occupied vehicle is shorter than a specified proportion of estimated travel time to travel from the pick-up location to the drop-off location of the passenger.

20. The method of claim 15, further comprising maintaining a specified number of the plurality of selected vehicles, wherein the plurality of desirable vehicle booking requests are transmitted to the vehicular devices of the plurality of excluded vehicles when the plurality of selected vehicles are less than the specified number.