

CLAIMS

1. A method comprising:

receiving a request for an autonomous vehicle from a client computing device, wherein the request identifies a first location, and also information of how the first location was specified by a user of the client computing device;

accessing pre-stored map information including a plurality of pre-determined stopping locations for the autonomous vehicle and a ranked set of heuristics, based on the first location;

determining if ranking of the heuristics of the ranked set of heuristics is to be adjusted based on how the first location was specified by the user;

identifying, based on the ~~first location~~determination, one of the plurality of pre-determined stopping locations for the autonomous vehicle ~~corresponding to at least one heuristic of a ranked set of heuristics;~~ and

providing the identified pre-determined stopping location for the autonomous vehicle as a recommended point to the client computing device for display with a map on a display of the client computing device, wherein the recommended point is provided as a suggested alternative to the first location.

2. The method of claim 1, further comprising adjusting the ranking of the heuristics of the set of ranked heuristics; and identifying the one of the pre-determined stopping locations based on the adjusted ranking. ~~wherein the at least one heuristic corresponds to the identified pre-determined stopping location being (1) a previously identified user preferred location included in a trip history for a user associated with the client computing device and (2) within a predetermined walking distance of the first location.~~

3. The method of claim 1, wherein ~~the~~ at least one heuristic of the ranked set of heuristics corresponds to the identified pre-determined stopping location being (1) a previous location at which ~~at~~the user associated with the client computing device was picked up or dropped off and (2) included in a trip history for the user and the previous location being within a predetermined walking distance of the first location.

4. The method of claim 1, wherein ~~the~~ at least one heuristic of the ranked set of heuristics corresponds to the identified pre-determined stopping location being (1) a predesignated preferred pullover spot for the vehicle according to the map information and (2)

within a predetermined walking distance of the first location, and the map information identifies a plurality of predesignated preferred pullover spots for the vehicle.

5. The method of claim 1, wherein ~~the~~ at least one heuristic of the ranked set of heuristics corresponds to the identified pre-determined stopping location being (1) a predesignated preferred pullover spot for the vehicle according to the map information and (2) within a predetermined walking distance of the first location.

6. The method of claim 1, wherein ~~the~~ at least one heuristic of the ranked set of heuristics corresponds to the identified pre-determined location being (1) within a predetermined distance of a known entrance of a building according to the map information and (2) the first location is within a building outline of the map information.

7. The method of claim 1, wherein ~~the~~ at least one heuristic of the ranked set of heuristics corresponds to the identified pre-determined location being (1) within a predetermined distance of a handicapped parking spot according to the map information and (2) within a predetermined walking distance of the first location.

8. The method of claim 1, wherein ~~the~~ at least one heuristic of the ranked set of heuristics corresponds to the identified pre-determined location being within a predetermined distance of a location of a street address corresponding to the first location when (1) the first location is a GPS location of the client computing device and (2) the GPS location corresponds to a residential area identified in the map information.

9. The method of claim 1, wherein ~~the~~ at least one heuristic of the ranked set of heuristics corresponds to the identified pre-determined stopping location being a closest predetermined stopping location to the first location according to the map information identifying a plurality of predetermined stopping locations for the vehicle to pull over.

10. The method of claim 1, further comprising:
receiving a current location of the client computing device;
determining a walkable path between the current location and the recommended point using the map information; and
providing the walkable path for display on the map with the recommended point.

11. The method of claim 1, further comprising:
identifying a subset of the plurality of pre-determined stopping locations that are within a predetermined radial distance of the first location; and
providing the subset for display on the map when ~~at~~the user pans on the map.

12. The method of claim 11, further comprising:
receiving a request for additional pre-determined stopping locations for a new location;
identifying a second subset of the plurality of pre-determined stopping locations that are within a predetermined radial distance of the new location; and
providing the second subset for display on the map when ~~at~~the user pans on the map.

13. The method of claim 1, further comprising:
receiving a current location of the client computing device;
identifying a subset of the plurality of pre-determined stopping locations that are within a predetermined radial distance of the current location; and
providing the subset for display on the map when ~~at~~the user pans on the map.

14. The method of claim 13, further comprising:
receiving a request for additional pre-determined stopping locations for a new location;
identifying a second subset of the plurality of pre-determined stopping locations that are within a predetermined radial distance of the new location; and
providing the second subset for display on the map when ~~at~~the user pans on the map.

15. The method of claim 1, further comprising:
receiving a confirmation message identifying the first location; and
dispatching ~~at~~the autonomous vehicle to pick up or drop off a passenger at the first location.

16. A system comprising one or more processors, configured to:
receive a request for an autonomous vehicle from a client computing device, wherein the request identifies a first location, and also information of how the first location was specified by a user of the client computing device;
accessing pre-stored map information including a plurality of pre-determined stopping locations for the vehicle and a ranked set of heuristics, based on the first location;

determine if ranking of the heuristics of the ranked set of heuristics is to be adjusted based on how the first location was specified by the user;

identify, based on the ~~first location~~determination, one of the plurality of pre-determined stopping locations for the autonomous vehicle ~~corresponding to at least one heuristic of a ranked set of heuristics~~; and

provide the identified pre-determined stopping location for the autonomous vehicle as a recommended point to the client computing device for display with a map on a display of the client computing device, wherein the recommended point is provided as a suggested alternative to the first location.

17. The system of claim 16, wherein the one or more processors are further configured to:

adjust the ranking of the heuristics of the set of ranked heuristics; and

identify the one of the plurality of pre-determined stopping locations based on the adjusted ranking. ~~receive a current location of the client computing device;~~

~~determine a walkable path between the current location and the recommended point using the map information; and~~

~~provide the walkable path for display on the map with the recommended point.~~

18. The system of claim 16, wherein the one or more processors are further configured to:

identify a subset of the plurality of pre-determined stopping locations that are within a predetermined radial distance of the first location; and

provide the subset for display on the map when ~~a~~the user pans on the map.

19. The system of claim 16, wherein the one or more processors are further configured to:

receive a current location of the client computing device;

identify a subset of the plurality of pre-determined stopping locations that are within a predetermined radial distance of the current location; and

provide the subset for display on the map when ~~a~~the user pans on the map.

20. The system of claim 16, further comprising the autonomous vehicle.