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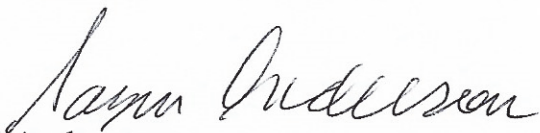
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Yours faithfully,



Sayuri Anderson

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(54) [Title of Invention] Route Guidance Device for Pedestrian

(57). [Abstract]

[Purpose] To provide safer route guidance to pedestrians.

[Constitution] Road crossing - related information (walk bridge, whether there is a traffic light or not, road width etc) is added as crossing conditions to the road information stored in road information storage means 101. Road crossing decision means 102 converts the crossing conditions into crossing cost. The conversion is performed such that the crossing conditions that enables the road to be crossed more safely is made to have a lower cost. As to the recommended route estimating means 105, a route is estimated in which from the current position that was input from the current position measurement means 103 to the destination that was input from the destination input means 104, the accumulation of the route costs that include crossing cost is minimized. Guidance means 106 provides guidance of the route.

See Fig 1 page 12 for the drawing

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[Claims]

[Claim 1] A guidance device for pedestrian wherein the route from the current position of the pedestrian to the destination is requested and the requested route is provided as guidance to the pedestrian,

The route guidance device for pedestrian wherein the device is equipped with road information storage means that stores the foot path map which is a map of the foot path, and walk conditions that correspond with at least part of the foot path that is included in the aforementioned foot path map, and is the information that specifies the walk environment by the said foot path;
walk cost decision means that converts the aforementioned walk conditions into walk cost so that depending on the walk environment specified by the said walk condition, the bigger the unpleasantness or danger degree of the walk that is estimated by the walk environment specified by the said walk condition, the larger the walk cost;
recommended route calculation means that requests the route from pedestrian's current position to the destination, based on the aforementioned foot path map so that the total sum of the foot path cost of each foot path included in the said route is minimized,
And also, the aforementioned foot path cost is provided to each foot path so that aforementioned walk cost is included.

[Claim 2] A route guidance device for pedestrian according to claim 1,
the route guidance device for pedestrian wherein the aforementioned walk conditions are information that specifies the crossing environment by the said foot path and corresponds to the foot path that crosses the vehicle-driven road among the foot paths that are included in the aforementioned foot path map,

The aforementioned walk cost decision means converts the aforementioned walk conditions into walk cost such that the larger the danger degree of crossing that is estimated by the crossing environment specified by the said walk condition, the larger the walk cost.

[Claim 3] The route guidance device for pedestrian according to claim 1,
the route guidance device for pedestrian wherein the aforementioned walk conditions are the facility provided to be crossed by the said foot path or the vehicle-driven road width that is crossed by foot path, wherein the facility or road width corresponds to the foot path that crosses the vehicle-driven road among the foot paths included in the aforementioned foot path map;
Aforementioned walk cost decision means converts the aforementioned walk conditions into the walk cost such that the bigger the danger degree of the facility specified by said walk conditions or the danger degree of crossing estimated by the route width, the bigger the walk cost.

[Claim 4] The route guidance device for pedestrian according to claim 1, 2 or 3,
the route guidance device for pedestrian wherein the device is equipped with means to store the walk conditions, and the walk cost table that describes the correspondence of the walk cost into which the said walk condition should be converted;

Means to change the aforementioned walk cost table content according to the instruction by the user,

Wherein, the aforementioned walk cost decision means converts the aforementioned walk condition into a walk cost according to the aforementioned walk cost table.

[Claim 5] The route guidance device for pedestrian according to claim 1, 2 or 3, the route guidance device for pedestrian wherein the device is equipped with means to store walk conditions, and a plural number of types of walk cost tables that describe the correspondence of walk cost into which the said walk conditions should be converted; Means to select one of the aforementioned multiple walk cost tables according to the instruction by user, Wherein the aforementioned walk cost decision means converts the aforementioned walk condition into the walk cost according to the walk cost table selected.

[Claim 6] A guidance device for pedestrian that requests the route from pedestrian's current position to the destination and provides guidance of the requested route to the pedestrian, The route guidance device for pedestrian wherein the device is equipped with road information storage means that stores foot path maps that consist of traffic signals that regulate the foot path walk that crosses vehicle-driven road, and foot paths and maps; Means that receives the current rule content of the said traffic signal, or the planned notice of the rule, from one of the traffic signals positioned front-most seen from the current position on the route that can consist of the routes that arrive at the destination from at least the current position; Means that estimates the rule content of the said traffic signal, of the time that the walker would arrive at the said signal machine, based on at least the aforementioned notice content and the current position, in case the walker walked toward the traffic signal that received the aforementioned notice; Means to revise the value of foot path cost provided to the foot path regulated to walk by the said traffic signal, according to the estimated rule content; recommended route calculation means that requests the route from pedestrian's current position to the destination, based on the aforementioned foot path map so that the total sum of the foot path cost of the foot path included in the said route is minimized.

[Claim 7] A guidance device for pedestrian that requests the route from pedestrian's current position to the destination and provides guidance of the requested route to the pedestrian, The route guidance device for pedestrian wherein the device is equipped with road information memory means that stores foot path maps that consist of traffic signals that regulates the foot path walk that crosses vehicle-driven road, and foot path and map; Means that provides two foot path costs with newly different values of the said foot path, based on the value of the foot path cost that is provided to the foot path that regulates the walk by the traffic signal positioned front- most seen from the current position on the route that can be the route that arrives at the destination from the current position; recommended route calculation means that can respectively request the route from pedestrian's current position to the destination, based on the aforementioned foot path map, using each of the aforementioned two foot path costs, so that the total sum of the foot path cost of the path included in the said route is minimized.

[Claim 8] The route guidance device for pedestrian according to claim 1, 2 or 3, 6 or 7, the route guidance device for pedestrian wherein the device is equipped with information reception means that receives from the outside wireless transmitter the information that is related to the current status of the route at least from the current position to the destination,

wherein the aforementioned recommended route calculation means, furthermore taking into account the information received, requests the recommended route from the current position to the destination.

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[Claim 9] The route guidance device for pedestrian according to claim 1, 2 or 3, 6 or 7, the route guidance device for pedestrian wherein the device is equipped with current position measurement means that measures the current position of the pedestrian, progress direction measurement means that measure the current progress direction of the pedestrian; road direction reception means that receives the vehicle-driven road direction seen from the pedestrian; the means that determines the direction of the vehicle-driven road received by the road direction reception means, and the current position measured by current position measurement means, the current position of the pedestrian that specifies which side of the left or right of the vehicle-driven road the pedestrian is positioned.

[Claim 10] The route guidance device for pedestrian according to claim 3, the route guidance device for pedestrian wherein the device is equipped with current position measurement means that measures the current position of the pedestrian, and the guidance means that provides guidance to the pedestrian the current position measured by current position measure means, recommended route calculated by the aforementioned recommended route calculation means, the facilities specified by the walk condition of the foot path used for the said crossing, before crossing the vehicle-driven road according to the recommended route by the pedestrian based on the aforementioned road information, or road width.

[Claim 11] The route guidance device for pedestrian according to claim 1, the route guidance device for pedestrian wherein the device is equipped with current position measurement means that measures the current position of the pedestrian, the guidance means that provides guidance of the current position measured by the current position of the pedestrian, walk environment specified by the walk condition of the foot path during current walk specified by aforementioned road information, or the change of the environment of said walk.

[Claim 12] The route guidance device for pedestrian according to claim 1, 2, 3, 6 or 7, the route guidance device for pedestrian wherein the device is equipped with guidance means that provides to the pedestrian the guidance of the route according to the recommended route that was requested by the aforementioned recommended route calculation means.

[Claim 13] The route guidance device for pedestrian according to claim 1, 2, 3, 6 or 7, the route guidance device for pedestrian wherein the device is equipped with guidance means that provides to the pedestrian the guidance of the route according to the recommended route requested by the aforementioned recommended route calculation means by voice or display, and shape change means that communicates to the pedestrian by hanging shapes that there exists guidance by the guidance means.

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