

CLAIMS:

1. A face orientation system of a ride, comprising:

one or more sensors; and

a controller configured to:

receive ride cart data from the one or more sensors, the ride cart data indicative of a presence and position of the ride cart on the ride;

determine ride cart orientation based on the ride cart data;

receive position data of a guest from the one or more sensors, the position data indicative of a position of a body, a face, or a combination thereof, of the guest;

determine face orientation, face rotation, or a combination thereof, of the guest based at least in part upon the ride cart orientation and the position data; and

transmit data indicative of the determined face orientation, face rotation, or a combination thereof to a downstream controller for subsequent control based upon the determined face orientation, face rotation, or the combination thereof.
2. The face orientation system of claim 1, wherein the position data comprises a skeletal image determined by skeletal tracking.
3. The face orientation system of claim 2, wherein determining the skeletal image by skeletal tracking comprises determining a position of essential joints, bones, and limbs of the guest to generate the skeletal image.

4. The face orientation system of claim 2, wherein the face orientation, face rotation, or a combination thereof, is predicted based on the ride cart orientation, the skeletal image, show scene features within a viewing range, or a combination thereof.

5. The face orientation system of claim 2, wherein the controller is configured to disregard ride cart data or face position data in response to the one or more sensors detecting an absence of the guest in the ride cart.

6. The face orientation system of claim 5, wherein the detecting the absence of the guest in the ride cart is based on the skeletal image, a pattern recognition, a radio frequency identification (RFID) tag, or a combination thereof.

7. The face orientation system of claim 5, comprising detecting the absence of the guest in the ride cart is based on a recognized pattern of a continuous solid color, design, or a combination thereof, on a ride cart seat.

8. The face orientation system of claim 1, comprising the downstream controller, wherein the downstream controller comprises a show scene controller that controls one or more scene features based upon the determined face orientation, face rotation, or the combination thereof, wherein the show scene controller, the controller, or a combination of the show scene controller and the controller are configured to:

determine if the guest is within a particular distance of one or more show scene features of the ride;

in response to determining that the guest is within the particular distance, determine a change to the one or more show scene features based on the face orientation; and

transmit a control signal to trigger a change to the one or more show scene features.

9. The face orientation system of claim 8, wherein the one or more show scene features comprise an animated figure, a display, a light effect, or a combination thereof.

10. The face orientation system of claim 9, wherein the change comprises an animation of the animated figure, a displayed image on the display, a lighting of the light effect, or a combination thereof.

11. The face orientation system of claim 10, wherein the change is determined in response to the face orientation of the guest facing the one or more show scene features within a viewing range.

12. A method, comprising:

receiving ride cart data from one or more sensors indicative of a presence and position of a ride cart on a ride;

determining a ride cart orientation based on the ride cart data;

receiving position data of a guest from the one or more sensors, the position data indicative of a position of a body, a face, or a combination thereof, of the guest;

determining face orientation, face rotation, or a combination thereof, of the guest based at least in part upon the ride cart orientation and position data; and

transmitting data indicative of the determined face orientation, face rotation, or a combination thereof to a downstream controller for subsequent control based upon the determined face orientation, face rotation, or the combination thereof.

13. The method of claim 12, wherein the position data comprises a skeletal tracking image, a facial recognition image, a body recognition image, or a combination thereof.

14. The method of claim 12, wherein the one or more sensors include radio frequency identification (RFID) tags, proximity sensors, infrared (IR) markers, weight sensors, cameras, or a combination thereof.

15. The method of claim 14, wherein the RFID tags, the IR markers, or a combination thereof, are placed on a ride path of the ride at one or more points of interest to track or predict the position of the ride cart within the ride path.

16. A tangible, non-transitory, machine readable medium comprising machine-readable instructions that, when executed by one or more processors of the machine, cause the machine to:

- receive ride cart data from one or more sensors indicative of a presence and position of a ride cart on a ride;

- determine a ride cart orientation based on the ride cart data;

- receive position data of a guest from the one or more sensors, the position data indicative of a position of a body, a face, or a combination thereof, of the guest;

- determine face rotation of the guest based at least in part upon the ride cart orientation and the position data; and

- transmit data indicative of the determined face orientation, face rotation, or a combination thereof, to a downstream controller for subsequent control based upon the determined face orientation, face rotation, or the combination thereof.

17. The machine readable medium of claim 16, wherein the position data comprises a skeletal tracking image, a facial recognition image, a body recognition image, or a combination thereof.

18. The machine readable medium of claim 16, wherein the determined face rotation of the guest is based on:

- a relatively less granular analysis comprising a facial recognition analysis for a fast paced portion of the ride; and

- a relatively more granular analysis that uses the ride cart orientation, the position data of the guest, or both as a known base orientation for a slow paced portion of the ride.

19. The machine readable medium of claim 16, wherein a 3D map of the guest on the

ride is generated based on the ride cart data, guest position data, and the ride cart's position data, wherein the 3D map indicates the determined face orientation of the guest relative to show scene features of the ride.

20. The machine readable medium of claim 19, wherein the 3D map is used to precisely determine facial features, face position, face turning, or a combination thereof, and wherein the determined face orientation uses machine learning to accurately predict face position based on reoccurring face orientation determinations made for specific parts of the ride within the 3D map.

21. The machine readable medium of claim 16, wherein a 3D map is used to determine the ride cart orientation based on a known ride track position and a known ride track orientation within the ride.