CLAIMS:

1. A ride vehicle control system for a ride vehicle of an attraction, the ride vehicle control system comprising:

a plurality of sensors configured to monitor a guest supported by the ride vehicle;

an actuator system configured to couple to the ride vehicle; and

one or more processors configured to:

receive signals from the plurality of sensors, wherein the signals are indicative of a position of the guest, a movement of the guest, or both;

determine an intended movement for the ride vehicle based on the signals; and

control the actuator system to adjust a resistance to movement of the ride vehicle, to adjust a force applied to the ride vehicle, or both to facilitate the intended movement.

2. The ride vehicle control system of claim 1, wherein the plurality of sensors comprises a head position sensor, and the signals comprise one or more signals indicative of a head position of the guest, a head movement of the guest, or both.

3. The ride vehicle control system of claim 1, wherein the plurality of sensors comprises an eye position sensor, and the signals comprise one or more signals indicative of an eye position of one or both eyes of the guest, an eye movement of the one or both eyes of the guest, or both.

4. The ride vehicle control system of claim 1, wherein the plurality of sensors comprises a grip sensor, and the signals comprise one or more signals indicative of a grip strength, a grip position of the guest, a grip movement of the guest, or any combination thereof.

5. The ride vehicle control system of claim 1, wherein the plurality of sensors comprises a skeletal sensor, and the signals comprise one or more signals indicative of a limb position of the guest, a limb movement of the guest, or both.

6. The ride vehicle control system of claim 1, wherein the actuator system comprises:

one or more motors; and

one or more linkage systems that are configured to couple the one or more motors to the ride vehicle, wherein the one or more processors are configured to adjust the resistance to the movement of the ride vehicle by controlling an output torque of the one or more motors.

7. The ride vehicle control system of claim 1, wherein the one or more processors are configured to control presentation of virtual images to the guest via a VR device worn by the guest.

8. The ride vehicle control system of claim 7, wherein the one or more processors are configured to determine the intended movement for the ride vehicle based on the signals and the virtual images that are being presented to the guest via the VR device worn by the guest.

9. The ride vehicle control system of claim 1, wherein the actuator system is configured to operate in a semi-passive mode that enables the guest to move the ride vehicle by shifting their body weight.

10. A ride vehicle control system for a ride vehicle of an attraction, the ride vehicle control system comprising:

one or more processors configured to:

receive a first signal from a head position sensor, wherein the first signal is indicative of a position of a head of a guest, a movement of the head of the guest, or both;

determine an intended movement for the ride vehicle based on the first signal; and

control an actuator system to adjust a resistance to movement of the ride vehicle to facilitate the intended movement.

11. The ride vehicle control system of claim 10, wherein the one or more processors are configured to:

receive a second signal from an eye position sensor, wherein the second signal is indicative of an eye position of one or both eyes of the guest, an eye movement of the one or both eyes of the guest, or both; and

determine the intended movement for the ride vehicle based on the first signal and the second signal.

12. The ride vehicle control system of claim 11, wherein the one or more processors are configured to:

receive a third signal from a grip sensor, wherein the third signal is indicative of a grip strength, a grip position of the guest, a grip movement of the guest, or any combination thereof; and

determine the intended movement for the ride vehicle based on the first signal, the second signal, and the third signal.

13. The ride vehicle control system of claim 11, wherein the one or more processors are configured to:

receive a fourth signal from a skeletal sensor, wherein the fourth signal is indicative of a limb position of the guest, a limb movement of the guest, or both; and

determine the intended movement for the ride vehicle based on the first signal, the second signal, and the fourth signal.

14. The ride vehicle control system of claim 10, wherein the one or more processors are configured to:

control presentation of virtual images to the guest via a VR device worn by the guest; and

determine the intended movement for the ride vehicle based on the first signal and the virtual images that are being presented to the guest via the VR device worn by the guest.

15. The ride vehicle control system of claim 10, comprising the actuator system, wherein the actuator system comprises:

one or more motors; and

one or more linkage systems that are configured to couple the one or more motors to the ride vehicle, wherein the one or more processors are configured to control an output torque of the one or more motors to adjust the resistance to the movement of the ride vehicle to facilitate the intended movement.

16. The ride vehicle control system of claim 10, wherein the one or more processors are configured to:

determine one or more characteristics of the guest, including a characteristic corresponding to a body weight of the guest; and

control the actuator system to adjust the resistance based on the one or more characteristics of the guest to facilitate the intended movement.

17. The ride vehicle control system of claim 16, wherein the one or more processors are configured to determine the one or more characteristics of the guest during a calibration portion of a ride cycle.

18. The ride vehicle control system of claim 10, wherein the one or more processors are configured to operate the actuator system in a semi-passive mode to enable the guest to move the ride vehicle by shifting body weight.

19. The ride vehicle control system of claim 10, wherein the one or more processors are configured to operate the actuator system in an active mode to drive the ride vehicle in accordance with the intended movement.

20. A method of operating a ride vehicle control system, the method comprising:

receiving, at one or more processors, a first signal from a head position sensor, wherein the first signal is indicative of a position of a head of a guest, a movement of the head of the guest, or both;

determining, using the one or more processors, an intended movement for a ride vehicle based on the first signal; and

controlling, using the one or more processors, an actuator system to adjust a resistance to movement of the ride vehicle to facilitate the intended movement by the guest shifting body weight.

21. A ride vehicle control system, comprising:

a computing system comprising one or more processors; and

memory storing instructions executable by the computing system to cause the computing system to:

receive one or more signals from one or more sensors, wherein the one or more signals are indicative of a position of a guest in a ride vehicle, a movement of the guest in the ride vehicle, or any combination thereof;

determine an intended movement for the ride vehicle based on the one or more signals; and

instruct an actuator system to adjust a resistance to movement of the ride vehicle, to drive movement of the ride vehicle, or any combination thereof to facilitate the intended movement.

22. The ride vehicle control system of claim 21, comprising the one or more sensors, wherein at least one of the one or more sensors are positioned within the ride vehicle.

23. The ride vehicle control system of claim 21, wherein the one or more sensors comprise at least one head position sensor, and the one or more signals comprise at least one signal indicative of the position of a head of the guest, the movement of the head of the guest, or any combination thereof.

24. The ride vehicle control system of claim 21, wherein the one or more sensors comprise at least one eye position sensor, and the one or more signals comprise at least one signal indicative of the position of an eye of the guest, the movement of the eye of the guest, or any combination thereof.

25. The ride vehicle control system of claim 21, wherein the one or more sensors comprise at least one grip sensor, and the one or more signals comprise at least one signal indicative of the position of a grip of the guest, the movement of the grip of the guest, or any combination thereof.

26. The ride vehicle control system of claim 21, wherein the one or more sensors comprise at least one skeletal sensor, and the one or more signals comprise at least one signal indicative of the position of a limb of the guest, the movement of the limb of the guest, or any combination thereof.

27. The ride vehicle control system of claim 21, wherein the one or more sensors comprise an array of weight sensors, and the one or more signals comprise at least one signal indicative of the position of the guest based on a weight of the guest, the movement of the guest based on shifting weight of the guest, or any combination thereof.

28. The ride vehicle control system of claim 21, wherein the instructions are executable by the computing system to cause the computing system to control presentation of virtual images to the guest via a virtual reality (VR) device worn by the guest.

29. The ride vehicle control system of claim 28, wherein the instructions are executable by the computing system to cause the computing system to determine the intended movement for the ride vehicle based on the one or more signals and the virtual images presented to the guest via the VR device worn by the guest.

30. The ride vehicle control system of claim 21, wherein the instructions are executable by the computing system to cause the computing system to:

determine one or more characteristics of the guest;

determine that an active mode operation is appropriate for the guest based on the one or more characteristics of the guest; and

in response to determining that the active mode operation is appropriate for the guest and while the guest is positioned within the ride vehicle, provide the instruction to the actuator system to drive the movement of the ride vehicle to facilitate the intended movement.

31. The ride vehicle control system of claim 30, wherein the instructions are executable by the computing system to cause the computing system to:

determine a respective one or more characteristics of an additional guest;

determine that a semi-passive mode operation is appropriate for the additional guest based on the respective one or more characteristics of the additional guest; and

in response to determining that the semi-passive mode operation is appropriate for the additional guest and while the additional guest is positioned within the ride vehicle, instruct the actuator system to adjust the resistance to the movement of the ride vehicle to facilitate the intended movement.

32. A ride vehicle control system, comprising:

a computing system comprising one or more processors; and

memory storing instructions executable by the computing system to cause the computing system to:

process one or more signals received from one or more sensors to determine guest movement of a guest relative to a ride vehicle; and

instruct an actuator system to drive ride vehicle movement of the ride vehicle based on the guest movement of the guest relative to the ride vehicle.

33. The ride vehicle control system of claim 32, wherein the one or more signals comprise at least one signal indicative of a shift in weight of the guest relative to the ride vehicle.

34. The ride vehicle control system of claim 32, wherein the one or more signals comprise at least one signal indicative of the guest movement of a head of the guest, the guest movement of an eye of the guest, the guest movement of a limb of the guest, or any combination thereof.

35. The ride vehicle control system of claim 32, comprising the ride vehicle, wherein the ride vehicle comprises a movable portion and a base portion, and the instructions are executable by the computing system to cause the computing system to instruct the actuator system to drive the movable portion to move relative to the base portion to drive the ride vehicle movement of the ride vehicle.

36. The ride vehicle control system of claim 32, wherein the instructions are executable by the computing system to cause the computing system to instruct the actuator system to drive the ride vehicle movement of the ride vehicle based on the guest movement of the guest relative to the ride vehicle and based on virtual images that are presented to the guest via a virtual reality (VR) device worn by the guest in the ride vehicle.

37. The ride vehicle control system of claim 32, wherein the instructions are executable by the computing system to cause the computing system to instruct the actuator system to drive at

least a portion of the ride vehicle in a manner correlated with the guest movement of the guest relative to the ride vehicle.

38. The ride vehicle control system of claim 32, wherein the instructions are executable by the computing system to cause the computing system to:

process the one or more signals received from one or more sensors to determine the guest movement of the guest relative to the ride vehicle comprises at least a portion of the guest leaning in a first direction; and

instruct the actuator system to drive at least a portion of the ride vehicle in the first direction to thereby drive the ride vehicle movement of the ride vehicle.

39. A method of operating a ride vehicle control system, the method comprising:

receiving one or more signals from one or more sensors, wherein the one or more signals are indicative of one or more guest inputs comprising a position of a guest in a ride vehicle, a movement of the guest in the ride vehicle, or any combination thereof; and

instructing an actuator system to move the ride vehicle based on the position of the guest in the ride vehicle, the movement of the guest in the ride vehicle, or any combination thereof to enable the guest to control the ride vehicle via the one or more guest inputs.

40. The method of claim 39, comprising:

processing the one or more signals received from the one or more sensors to determine that the movement of the guest in the ride vehicle comprises at least a portion of the guest leaning in a first direction; and

instructing the actuator system to drive at least a portion of the ride vehicle in the first direction to thereby move the ride vehicle based on the movement of the guest in the ride vehicle.