CLAIMS:

1. A ride system, comprising:

a ride vehicle configured to accommodate a passenger and to travel along a ride path during a ride in an amusement park;

a head mounted display connected to the ride vehicle and configured to be worn by the passenger; and

a tide and game control system integrated with the ride vehicle and configured to coordinate a ride experience of the passenger with events occurring during the ride using at least the head mounted display and the ride vehicle, wherein the ride and game control system comprises:

a user interface configured to receive inputs from the passenger;

a ride controller configured to control physical operation of the ride vehicle based at least on data relating to operational parameters of the ride vehicle and the inputs from the passenger;

a monitoring system configured to monitor at least a position and an orientation of the head mounted display, a position and an orientation of the ride vehicle, or a combination thereof; and

a computer graphics generation system communicatively coupled to the head mounted display and configured to selectively generate augmented reality (AR) features for display on the head mounted display based on data received from the ride controller, the monitoring system, the user interface, or any combination thereof, and to provide a specific AR experience associated with a particular real-world feature to the passenger in response to a determination that more than a threshold number of additional passengers in the tide vehicle are gazing at the particular real-world feature.

2. The ride system of claim 1, wherein the computer graphics generation system is configured to selectively generate the AR features based at least on data indicative of the position, a yaw, and a velocity of the ride vehicle received from the monitoring system.

3. The ride system of claim 1, wherein the monitoring system comprises one or more orientation and position sensors, one or more motion tracking sensors, one or more inertial measurement units, one or more presence sensors, or a combination thereof.

4. The ride system of claim 1, wherein the computer graphics generation system is configured to perform perspective adjustments to the AR features in response to determining that the passenger has an obstructed field of view.

5. The ride system of claim 4, wherein the computer graphics generation system is configured to perform perspective adjustments to the AR features so that the passenger has an unobstructed view of the AR features.

6. The ride system of claim 1, wherein the ride and game control system is configured to provide a unique AR experience to the passenger that corresponds to identifying information relating to the passenger.

7. The ride system of claim 1, wherein the computer graphics generation system is configured to generate the AR features based on simulations of one or more physics models and a digital three-dimensional model of an environment surrounding the ride vehicle.

8. The ride system of claim 1, comprising a show effect system communicatively coupled to the ride and game control system, wherein the show effect system comprises a display device and a lighting system disposed along the ride path.

9. The ride system of claim 8, wherein the show effect system is configured to change operation of the display device, operation of the lighting system, or both, based on data from the ride controller, the monitoring system, the user interface, or a combination thereof.

10. A method, comprising:

receiving and analyzing data via a ride and game control system integrated with a ride vehicle configured to accommodate one or more passengers, wherein the ride vehicle is configured to travel along a ride path during a ride in an amusement park, and wherein the data relates to the one or more passengers, the ride vehicle, or both;

determining, via the ride and game control system, whether a first real-world object in an environment surrounding the ride vehicle is at least partially occluded to a respective

passenger of the one or more passengers by a second real-world object in the environment based on the data;

generating, via a computer graphics generation system of the ride and game control system, gaming effects based on the data, wherein the gaming effects comprise augmented reality (AR) graphics of the first real-world object generated in response to identification that the first real-world object is at least partially occluded to the respective passenger; and

transmitting, via the computer graphics generation system, the AR graphics of the first real-world object for display on a head mounted display configured to be worn by the respective passenger in the tide vehicle to perform a perspective adjustment for the respective passenger by overlaying the AR graphics of the first real-world object onto a field of view of the respective passenger such that the AR graphics of the first real-world object are overlaid onto the second real-world object, the environment or both.

11. The method of claim 10, wherein receiving the data comprises receiving real-time data collected via one or more orientation and position sensors, one or more motion tracking sensors, one or more inertial measurement units, one or more presence sensors, or any combination thereof.

12. The method of claim 10, comprising displaying, via the head mounted display, the AR graphics on one or more displays of the head mounted display, wherein the head mounted display is physically coupled to the ride vehicle.

13. The method of claim 10, wherein generating the gaming effects comprises generating the AR graphics based on simulations of one or more physics models and a digital three-dimensional model of the environment surrounding the ride vehicle.

14. The method of claim 10, comprising displaying visualization graphics on one or more displays disposed along the ride path, changing operation of one or more lighting systems disposed along the ride path, or both, based on the data, using a show effect system in communication with the ride and game control system, wherein the show effect system is separate from the ride vehicle.

15. A ride and game control system physically integrated with a ride vehicle configured to carry a passenger along a ride path, the ride and game control system comprising:

a ride controller configured to receive real-time data related to an input control state from at least a user interface and to receive data related to operational parameters of the ride vehicle;

a game controller communicatively coupled to the ride controller and configured to push updates relating to the input control state and at least one of the operational parameters to features of the ride vehicle; and

a computer graphics generation system communicatively coupled to the game controller and to a head mounted display configured to be worn by the passenger, wherein the computer graphics generation system is configured to selectively render augmented reality (AR) graphics for display on the head mounted display based at least on the updates from the game controller, and wherein the game controller is configured to adjust a lighting system disposed along the ride path based on the AR graphics and a gaze direction of the passenger to accentuate the AR graphics as overlaid onto a field of view of the passenger by the head mounted display.

16. The ride and game control system of claim 15, wherein the ride vehicle is configured to carry multiple passengers along the ride path, and wherein the ride and game control system comprises multiple computer graphics generation systems that are each configured to receive the updates from the game controller to render corresponding AR graphics that are unique to a perspective of each passenger of the multiple passengers for display on respective head mounted displays of the multiple passengers.

17. The ride and game control system of claim 16, wherein the game controller is configured to:

provide a summed game state of the ride vehicle to a server located off-board of the ride vehicle; and

provide scene-specific gaming events to a projection game computer or a show effect system, or both, located off-board of the ride vehicle.

18. The ride and game control system of claim 15, comprising a monitoring system having one or more orientation and position sensors, one or more motion tracking sensors, one or more inertial measurement units, one or more presence sensors, or a combination thereof, wherein the monitoring system is configured to provide feedback to the game controller, the feedback indicative of the gaze direction of the passenger.