CLAIMS:

1. An interactive video game system, comprising:

at least one sensor disposed near a play area and configured to collect scanning data of a player positioned in the play area;

at least one display device disposed near the play area and configured to present a virtual representation associated with the player; and

a controller communicatively coupled to the at least one sensor and the at least one display device, wherein the controller is configured to:

receive, from the at least one sensor, the scanning data of the player in the play area;

generate at least one model based on the received scanning data of the player;

identify an action of the player in the play area based on the generated at least one model;

generate the virtual representation of the player based on the generated at least one model and the identified action of the player;

identify one or more properties of the player, wherein the one or more properties relate to a performance by the player in a game played via the interactive video game system; and

present, on the at least one display device, the generated virtual representation of the player in a virtual environment, wherein a respective action of the presented virtual representation is augmented relative to the identified action of the player based on the one or more properties of the player, and wherein the presented virtual representation comprises a silhouette of the player.

2. The interactive video game system of claim 1, wherein the generated at least one model includes a shadow model, and wherein the controller is configured to generate the virtual representation for the player based on the shadow model of the player.

3. The interactive video game system of claim 1, wherein the generated at least one model includes a skeletal model, and wherein the controller is configured to identify the action of the player based on the skeletal model of the player.

4. The interactive video game system of claim 1, wherein the controller is configured to: generate an animal-based virtual representation of the player based on the generated at least one model and the identified action of the player; and present, on the display device, the animal-based virtual representation of the player in the virtual environment, wherein the respective action of the presented animal-based virtual representation corresponds to and is augmented relative to the identified action of the player based on the one or more properties of the player.

5. The interactive video game system of claim 1, wherein the identified action of the player is jumping and the respective action of the presented virtual representation is jumping in a manner that is augmented relative to the jumping of the player, or the identified action of the player is running and the respective action of the presented virtual representation is running in a manner that is augmented relative to the running of the player.

6. The interactive video game system of claim 1, wherein the generated virtual representation is associated with a super human ability that is triggered by the identified action of the player and the one or more properties of the player, and wherein the controller is configured to: present, on the display device, the generated virtual representation of the player in the virtual environment, wherein the respective action of the virtual representation corresponds with the super human ability.

7. The interactive video game system of claim 1, wherein a respective shape of the virtual representation corresponds to a respective shape of the player, the identified action of the player is flapping arms, and the respective action of the presented virtual representation is flying.

8. The interactive video game system of claim 1, wherein the identified action of the player is jumping to a first height, across a first distance, or both, and the respective action of the presented virtual representation is jumping to a second height that is greater than the first height, a second distance that is greater than the first distance, or both.

9. The interactive video game system of claim 1, wherein the one or more properties of

the player comprise an item acquired during the game or a number of points acquired during the game.

10. A method of operating an interactive video game system, comprising:

receiving, via processing circuitry of a controller of the interactive video game system, scanning data of a player positioned within a play area;

generating, via the processing circuitry, a shadow model and a skeletal model of the player based on the received scanning data;

generating, via the processing circuitry, a virtual representation of the player based on the generated shadow model, wherein a respective shape of the virtual representation corresponds to a respective shape of the player;

identifying, via the processing circuitry, an action of the player in the play area based on the generated skeletal model;

identifying, via the processing circuitry, one or more properties of the player, wherein the one or more properties comprise a first item acquired during a game played by the player via the interactive video game system, a number of points acquired during the game, a second item acquired in a physical store, or any combination thereof; and

presenting, via a display device of the interactive video game system, the generated virtual representation in a virtual environment performing a respective action that corresponds to and is augmented relative to the action of the player in response to identifying the action of the player in the play area and based on the one or more properties of the player.

11. The method of claim 10, comprising: receiving, via the processing circuitry, second scanning data for a second player positioned within the play area; generating, via the processing circuitry, a second shadow model and a second skeletal model of the second player based on the received second scanning data; generating, via the processing circuitry, a second virtual representation for the second player based on the generated second shadow model, wherein a respective shape of the second virtual representation corresponds to a respective shape of the second player; identifying, via the processing circuitry, a second action of the second player in the play area based on the generated second skeletal model; and presenting, via the display device, the generated second virtual representation in the

virtual environment performing a respective action that corresponds to and is augmented relative to the identified second action of the second player in response to identifying the second action of the second player in the play area.

12. An interactive video game system, comprising a controller configured to:

receive, from at least one sensor of the interactive video game system, scanning data of a player in a play area;

generate a shadow model and a skeletal model from the received scanning data of the player;

generate a virtual representation of the player based on the generated shadow model;

identify an action of the player in the play area based on the generated skeletal model of the player;

identify one or more properties of the player, wherein the one or more properties relate to a performance by the player in a game played via the interactive video game system;

trigger a respective action for the generated virtual representation based on the identified action and the one or more properties, wherein the respective action for the generated virtual representation corresponds to and is augmented relative to the identified action of the player; and

present, on a display device of the interactive video game system, the generated virtual representation in a virtual environment performing the triggered respective action, wherein the presented virtual representation comprises a silhouette of the player.

13. The interactive video game system of claim 12, wherein the generated virtual representation comprises an animal-based virtual representation, the animal-based virtual representation comprises an aquatic animal, the identified action comprises swimming motion of arms of the player, and the respective action comprises swimming.

14. The interactive video game system of claim 12, wherein the generated virtual representation comprises an animal-based virtual representation, the animal-based virtual representation is a leaping animal, the identified action comprises jumping of the player, and the respective action comprises leaping.

15. The interactive video game system of claim 12, wherein the respective action comprises a super human ability.

16. The interactive video game system of claim 12, wherein the controller is configured to: activate one or more physical effects devices of the interactive video game system in response to identifying the action of the player.

17. The interactive video game system of claim 16, wherein the activated one or more physical effects devices comprise a thermal physical effects device configured to warm or cool a portion of the player in response to identifying the action of the player.

18. The interactive video game system of claim 16, wherein the activated one or more physical effects devices comprise an ultrasonic haptic physical effects device configured to provide a touch sensation to a portion of the player in response to identifying the action of the player.

19. The interactive video game system of claim 12, wherein the controller is configured to activate one or more robotic devices near the play area in response to identifying the action of the player.

20. The interactive video game system of claim 12, wherein the controller is configured to modify at least one of a size, color, or texture of the virtual representation of the player during the game based on the one or more properties.

21. An interactive video game system, comprising:

at least one sensor disposed near a play area and configured to collect scanning data of a player positioned in the play area;

at least one display device disposed near the play area and configured to present a virtual representation associated with the player; and a controller communicatively coupled to the at least one sensor and the at least one display device, wherein the controller is configured to:

receive, from the at least one sensor, the scanning data of the player in the

play area;

generate at least one model based on the received scanning data of the player;

identify an action of the player in the play area based on the generated at least one model;

generate the virtual representation of the player based on the generated at least one model and the identified action of the player;

identify one or more properties of the player, wherein the one or more properties relate to a performance by the player in a game played via the interactive video game system, and wherein the one or more properties comprise an item acquired during the game or a number of points acquired during the game; and

present, on the at least one display device, the generated virtual representation of the player in a virtual environment, wherein a respective action of the presented virtual representation is augmented relative to the identified action of the player based on the one or more properties of the player.

22. An interactive video game system, comprising a controller configured to:

receive, from at least one sensor of the interactive video game system, scanning data of a player in a play area;

generate a shadow model and a skeletal model from the received scanning data of the player;

generate a virtual representation of the player based on the generated shadow model;

identify an action of the player in the play area based on the generated skeletal model of the player;

identify one or more properties of the player, wherein the one or more properties relate to a performance by the player in a game played via the interactive video game system;

trigger a respective action for the generated virtual representation based on the identified action and the one or more properties, wherein the respective action for the generated virtual representation corresponds to and is augmented relative to the identified action of the player; and

present, on a display device of the interactive video game system, the generated virtual representation in a virtual environment performing the triggered respective action, wherein the generated virtual representation comprises an animal-based virtual representation, and wherein:

the animal-based virtual representation comprises an aquatic animal, the identified action comprises swimming motion of arms of the player, and the respective action comprises swimming; or

the animal-based virtual representation is a leaping animal, the identified action comprises jumping of the player, and the respective action comprises leaping.

23. An interactive amusement system, comprising:

a plurality of sensing units, wherein each sensing unit of the plurality of sensing units is configured to collect respective scanning data of a person positioned in an interaction area and to generate a respective partial model of the person by respective processing circuitry of the sensing unit;

a video display disposed near the interaction area and configured to present a virtual representation associated with the person; and

a controller communicatively coupled to the plurality of sensing units and the video display, wherein the controller is configured to:

receive the respective partial model of the person from each sensing unit of the plurality of sensing units;

fuse each received partial model to generate a model of the person;

identify an action of the person based on the model;

generate the virtual representation of the person based on the model and the identified action; and

present, on the video display, the generated virtual representation of the person in a virtual environment performing augmented motions that correlate with the identified action of the person and that are exaggerated in accordance with the model.

24. The interactive amusement system of claim 23, wherein the generated virtual representation of the person is a silhouette of the person.

25. The interactive amusement system of claim 23, wherein the model includes a shadow model and the controller is configured to generate the virtual representation based on the shadow model.

26. The interactive amusement system of claim 23, wherein the model includes a skeletal model of the person, and wherein the controller is configured to identify the action of the person based on the skeletal model of the person.

27. The interactive amusement system of claim 23, wherein the controller is configured to generate a virtual object and present the virtual object on the video display based on the identified action of the person.

28. The interactive amusement system of claim 27, wherein the identified action of the person is a throwing motion and the virtual object is a thrown object.

29. The interactive amusement system of claim 28, wherein the augmented motions correspond to the throwing motion and exaggerated virtual action of the thrown object.

30. The interactive amusement system of claim 23, wherein the generated virtual representation depicts a super human ability that is triggered by the identified action of the person.

31. The interactive amusement system of claim 23, comprising a movable object model configured to generate a virtual moving object.

32. The interactive amusement system of claim 31, wherein the controller is configured to present the virtual moving object as moving on the video display in coordination with the generated virtual representation of the person based on the movable object model and the model.

33. A method of operating an interactive amusement system, the method comprising:

receiving, via processing circuitry of a controller, a respective partial model of a

person from each of a plurality of sensing units, wherein each sensing unit of the plurality of sensing units is configured to collect respective scanning data of the person and generate the respective partial model of the person by respective processing circuitry of the sensing unit;

fusing, via the processing circuitry of the controller, each received partial model to generate a model of the person;

identifying, via the processing circuitry of the controller, an action of the person based on the model;

generating, via the processing circuitry of the controller, a virtual representation of the person based on the model and the action;

presenting, via a video display that is viewable by the person, the generated virtual representation in a virtual environment performing a virtual action that corresponds to and is augmented relative to the action of the person.

34. The method of claim 33, comprising identifying a physical item held or worn by the person.

35. The method of claim 33, wherein the virtual action is based on a trait of the physical item.

36. The method of claim 33, comprising generating the virtual representation of the person as a silhouette.

37. The method of claim 33, comprising generating, via the processing circuitry of the controller, a virtual moving object in coordination with the virtual representation of the person.

38. The method of claim 37, wherein the virtual moving object is presented based on the virtual action.

39. An interactive amusement system, comprising a controller configured to:

receive a respective partial model of a person from each sensing unit of a plurality of sensing units, wherein each sensing unit of the plurality of sensing units is configured to collect respective scanning data of the person and generate the respective partial model of the person by respective processing circuitry of the sensing unit;

fuse each received partial model to generate a model of the person;

identify an action of the person based on the model of the person;

generate a virtual representation of the person based on the model and the identified action;

activate an augmented activity of the virtual representation based on the identified action, wherein the augmented activity includes a virtual exaggeration of the identified action; and

present, on a video display, the virtual representation in a virtual environment performing the augmented activity.

40. The interactive amusement system of claim 39, wherein the controller is configured to generate a virtual moving object based on the identified action, the augmented activity, or both.

41. The interactive amusement system of claim 39, wherein the controller is configured to generate the virtual representation as a silhouette of the person.

42. The interactive amusement system of claim 39, wherein the controller is configured to generate a virtual moving object and present the virtual moving object on the video display based on the identified action of the person corresponding to a throwing or kicking motion.