202, and thus the cameras **212**, can be oriented in any of a variety of ways for ergonomic and/or viewing purposes. Accordingly, the gesture recognition interface system **200** can be configured in any of a variety of ways.

[0044] In view of the foregoing structural and functional features described above, a methodology in accordance with various aspects of the present invention will be better appreciated with reference to FIG. **6**. While, for purposes of simplicity of explanation, the methodologies of FIG. **6** are shown and described as executing serially, it is to be understood and appreciated that the present invention is not limited by the illustrated order, as some aspects could, in accordance with the present invention, occur in different orders and/or concurrently with other aspects from that shown and described herein. Moreover, not all illustrated features may be required to implement a methodology in accordance with an aspect of the present invention.

[0045] FIG. **6** illustrates an example of a method **250** for providing inputs in accordance with an aspect of the invention. At **252**, a first side of a light-diffusive screen is illuminated with at least one light source. The illumination could be provided by IR light sources. The light-diffusive screen could also be an output display, such that it displays visual content. At **254**, a user provides simulated inputs in a foreground of a second side of the light-diffusive screen via gestures associated with an input object. The second side can be opposite the first side. The input object could be the user's hand, such that the user simulates the inputs via hand gestures. In addition, the simulated inputs could be simulated mouse inputs, zoom commands, or rotate commands.

[0046] At **256**, a first and second plurality of images of the input object are generated substantially concurrently based on a brightness contrast between the input object and the second side of the light-diffusive screen. The first and second plurality of images could thus be a plurality of matched pairs of images, such that each image of the matched pair corresponds to the input object from a different perspective at substantially the same time. The light-diffusive screen could appear to be much brighter than the user controlled input object. Therefore, the plurality of images could be silhouette images of the user controlled input object.

[0047] At **258**, a plurality of three-dimensional physical locations of the input object are determined based on a relative separation of the input object in the first plurality of images relative to the second plurality of images. The relative separation could be a parallax separation of one or more determined points, such as end-points, associated with the input object. The three-dimensional location of the input object could be determined relative to the light-diffusive screen. Changes in location of the three-dimensional location of the input object in each of the plurality of matched pairs of images could be determinative of the physical motion of the input object.

[0048] At **260**, it is determined whether the physical motion associated with the input object corresponds to any of a plurality of predefined gestures. The predefined gestures could be stored in a memory. Each predefined gesture could be associated with a different device input. At **262**, at least one device input is provided based on determining that the physical motion associated with the input object corresponds to a given one of the predefined gestures. Device inputs could be mouse inputs, such that two-dimensional motion across the light-diffusive screen could simulate motion of a mouse cursor, and a touch of the light-diffusive screen could simulate a mouse left-click. In addition, motion associated with multiple features of the input object could provide different types of inputs, such as rotate and zoom commands.

[0049] What have been described above are examples of the present invention. It is, of course, not possible to describe every conceivable combination of components or methodologies for purposes of describing the present invention, but one of ordinary skill in the art will recognize that many further combinations and permutations of the present invention are possible. Accordingly, the present invention is intended to embrace all such alterations, modifications and variations that fall within the spirit and scope of the appended claims.

What is claimed is:

1. A gesture recognition interface system comprising:

at least one light source positioned to illuminate a first side of a light-diffusive screen;

at least one camera positioned on a second side of the light-diffusive screen, the second side being opposite the first side, and configured to receive a plurality of images based on a brightness contrast difference between the light-diffusive screen and an input object; and

a controller configured to determine a given input gesture based on changes in relative locations of the input object in the plurality of images, and being further configured to initiate a device input associated with the given input gesture.

2. The interface system of claim **1**, wherein the controller is configured to implement an object detection algorithm that is configured to detect a two-dimensional location of at least one feature associated with the input object in each of the plurality of images.

3. The interface system of claim **1**, wherein the light-diffusive screen is configured to display visual content, such that the given input gesture can be interactive with the visual content.

4. The interface system of claim **3**, further comprising a projector configured to provide the visual content.

5. The interface system claim **4**, wherein the projector is further configured as the at least one light source based on projecting the visual content and substantially unfiltered infrared (IR) light to the first side of the light-diffusive screen.

6. The interface system of claim **4**, further comprising a beamsplitter configured to substantially combine light emitted from the at least one light source and the visual content substantially on-axis on the first side of the light-diffusive screen.

7. The interface system of claim **1**, wherein the light-diffusive screen is configured as a substantially vertical visual content display surface.

8. The interface system of claim **1**, wherein the at least one light source is configured to emit infrared (IR) light, and wherein each of the at least one camera comprises an IR filter, such that the plurality of images are configured as silhouette images of the input object relative to diffused IR light emitted from the second side of the light-diffusive screen.

9. The interface system of claim **1**, wherein the at least one camera comprises a plurality of cameras that are each configured to substantially concurrently receive a silhouette image of the input object, the silhouette image of the input object received by each of the plurality of cameras comprising a matched set of images of the input object, and wherein the controller determines a three-dimensional physical loca-