CLAIMS

1. A method for placing content into an imaged environment that is external to a computing device, the method comprising:

receiving content;

obtaining depth information corresponding to the imaged environment external to the computing device;

receiving an indication to associate the content with a location in the imaged environment based on the depth information; and

warping at least a portion of the content based on the depth information corresponding to the imaged environment external to the computing device, wherein the warping of the at least a portion of the content is achieved by centering the content in a camera frustum and moving a Z component of the content's vertices along a forward vector of the camera frustum, and the amount that each vertex is moved is dependent on the current depth estimation for the closest pixel to the content's X and Y coordinates.

2. The method of claim 1, further comprising:

acquiring at least one of video or image content of the imaged environment external to the computing device, wherein the at least one of video or image content including the warped portion of the content.

3. The method of claim 2, further comprising:

receiving second content;

obtaining second depth information corresponding to the imaged environment external to the computing device;

receiving a second indication to associate the second content with a second location in the imaged environment based on the second depth information; and

warping at least a portion of the second content based on the second depth information corresponding to the imaged environment external to the computing device,

wherein the at least one of video or image content of the imaged environment external to the computing device includes the warped portion of the content and the warped portion of the second content.

4. The method of claim 2, wherein the content comprises video content comprising a plurality of video frames, and wherein the plurality of video frames are displayed in the at least one of video or image content of the imaged environment external to the computing device.

5. The method of claim 1, wherein the depth information is obtained from a plurality of images acquired by an image sensor of the computing device.

6. The method of claim 1, further comprising:

determining that the depth information corresponding to the imaged environment is associated with a confidence score that is greater than a threshold; and

warping at least a portion of the content to match at least one plane in the imaged environment.

7. The method of claim 1, further comprising:

determining that the depth information corresponding to the imaged environment is associated with a confidence score that is less than a threshold; and

displaying the content at the location in the imaged environment.

8. The method of claim 1, further comprising:

receiving second content in response to input information;

obtaining second depth information corresponding to the imaged environment external to the computing device;

determining that the second depth information corresponding to the imaged environment is associated with a confidence score that is less than a threshold;

receiving a second indication to associate the second content with a second location in the imaged environment based on the second depth information; and

displaying the second content at the second location in the imaged environment.

9. The method of claim 8, further comprising:

determining that the second depth information corresponding to the imaged environment is associated with a confidence score that is greater than a threshold;

receiving the second indication to associate the second content with a second location in the imaged environment based on the second depth information; and

warping at least a portion of the second content to match at least one plane in the imaged environment.

10. The method of claim 1, further comprising:

modifying the content by separating an entity in the content from a background of the content or modifying a background color of a portion of the content prior to the content being warped.

11. The method of claim 1, wherein the depth information includes a depth map image, the method further comprising:

saving the depth map image from the depth information when the indication to associate the content with the location in the imaged environment is received.

12. A system configured to place content into an imaged environment that is external to a computing device, the system comprising:

a processor; and

memory including instructions, which when executed by the processor, causes the processor to:

receive content;

obtain depth information corresponding to the imaged environment external to the computing device;

receive an indication to associate the content with a location in the imaged environment based on the depth information; and

warp at least a portion of the content based on the depth information corresponding to the imaged environment external to the computing device, wherein the warping of the at least a portion of the content is achieved by centering the content in a camera frustum and moving a Z component of the content's vertices along a forward vector of the camera frustum, and the amount that each vertex is moved is dependent on the current depth estimation for the closest pixel to the content's X and Y coordinates.

13. The system of claim 12, wherein the instructions, when executed by the processor, cause the processor to:

acquire at least one of video or image content of the imaged environment external to the computing device, wherein the at least one of video or image content including the warped portion of the content.

14. The system of claim 13, wherein the instructions, when executed by the processor, cause the processor to:

receive second content;

obtain second depth information corresponding to the imaged environment external to the computing device;

receive a second indication to associate the second content with a second location in the imaged environment based on the second depth information; and

warp at least a portion of the second content based on the second depth information corresponding to the imaged environment external to the computing device,

wherein the at least one of video or image content of the imaged environment external to the computing device includes the warped portion of the content and the warped portion of the second content.

15. The system of claim 13, wherein the content comprises video content comprising a plurality of video frames and wherein the plurality of video frames are displayed in the at least one of video or image content of the imaged environment that is external to the computing device.

16. The system of claim 12, wherein the instructions, when executed by the processor, cause the processor to save the depth information corresponding to when the indication to associate the content with the location in the imaged environment is received.

17. A computer-readable storage medium including instructions, which when executed by a processor, cause the processor to:

receive content;

obtain depth information corresponding to an imaged environment that is external to a computing device;

receive an indication to associate the content with a location in the imaged environment based on the depth information; and

warp at least a portion of the content based on the depth information corresponding to the imaged environment external to the computing device, wherein the warping of the at least a portion of the content is achieved by centering the content in a camera frustum and moving a Z component of the content's vertices along a forward vector of the camera frustum, and the amount that each vertex is moved is dependent on the current depth estimation for the closest pixel to the content's X and Y coordinates.

18. The computer-readable storage medium of claim 17, wherein the instructions, which when executed by a processor, cause the processor to:

acquire at least one of video or image content of the imaged environment that is external to the computing device, wherein the at least one of video or image content including the warped portion of the content.

19. The computer-readable storage medium of claim 18, wherein the instructions, which when executed by a processor, cause the processor to:

receive second content;

obtain second depth information corresponding to the imaged environment external to the computing device;

receive a second indication to associate the second content with a second location in the imaged environment based on the second depth information; and

warp at least a portion of the second content based on the second depth information corresponding to the imaged environment external to the computing device,

wherein the at least one of video or image content of the imaged environment external to the computing device includes the warped portion of the content and the warped portion of the second content.

20. The computer-readable storage medium of claim 17, wherein the content comprises video content comprising a plurality of video frames, and wherein the plurality of video frames are displayed in the at least one of video or image content of the imaged environment that is external to the computing device.