PRESENTING ENVIRONMENT BASED ON PHYSICAL DIMENSION

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] This application claims priority to U.S. patent application No. 62/906,659, filed on Sep. 26, 2019, which is hereby incorporated by reference in its entirety.

TECHNICAL FIELD

[0002] The present disclosure generally relates to rendering of computer-generated reality (CGR) environments and objects.

BACKGROUND

[0003] Some devices are capable of generating and presenting computer-generated reality (CGR) environments. Some CGR environments include virtual environments that are simulated replacements of physical environments. Some CGR environments include augmented environments that are modified versions of physical environments. Some devices that present CGR environments include mobile communication devices, such as smartphones, head-mountable displays (HMDs), eyeglasses, heads-up displays (HUDs), and optical projection systems.

BRIEF DESCRIPTION OF THE DRAWINGS

[0004] So that the present disclosure can be understood by those of ordinary skill in the art, a more detailed description may be had by reference to aspects of some illustrative implementations, some of which are shown in the accompanying drawings.

[0005] FIG. **1**A illustrates an exemplary operating environment in accordance with some implementations.

[0006] FIG. **1**B illustrates another exemplary operating environment in accordance with some implementations.

[0007] FIG. **2** illustrates an example system that generates a CGR environment according to various implementations.

[0008] FIG. **3** is a block diagram of an example CGR content module in accordance with some implementations.

[0009] FIGS. **4**A-**4**C are a flowchart representation of a method for generating a CGR environment in accordance with some implementations.

[0010] FIG. **5** is a block diagram of a device in accordance with some implementations.

[0011] FIG. **6** illustrates an example system that displays a CGR object in an augmented reality (AR) environment according to various implementations.

[0012] FIG. **7** is a block diagram of an example CGR content module in accordance with some implementations.

[0013] FIGS. **8**A-**8**C are a flowchart representation of a method for displaying a CGR object in an AR environment in accordance with some implementations.

[0014] FIG. **9** is a block diagram of a device in accordance with some implementations.

[0015] In accordance with common practice the various features illustrated in the drawings may not be drawn to scale. Accordingly, the dimensions of the various features may be arbitrarily expanded or reduced for clarity. In addition, some of the drawings may not depict all of the components of a given system, method or device. Finally, like reference numerals may be used to denote like features throughout the specification and figures.

SUMMARY

[0016] Various implementations disclosed herein include devices, systems, and methods for generating a dimensionally accurate computer-generated reality (CGR) environment with a scaled CGR object. In some implementations, a method includes obtaining environmental data corresponding to a physical environment. A known physical article located within the physical environment is identified based on the environmental data. The known physical article is associated with a known dimension. A physical dimension of the physical environment is determined based on the known dimension of the known physical article. A CGR environment is generated that represents the physical environment. A virtual dimension of the CGR environment is a function of the physical dimension of the physical environment.

[0017] Various implementations disclosed herein include devices, systems, and methods for instantiating a CGR object in an augmented reality (AR) environment and scaling the CGR object based on dimension information associated with the CGR object and a known dimension of a known physical article. In some implementations, a method includes displaying an AR environment that corresponds to a physical environment. It is determined to display a CGR object in the AR environment. The CGR object represents a physical article associated with a physical dimension. A known physical article located within the physical environment is identified. The known physical article is associated with a known dimension. A virtual dimension for the CGR object is determined based on the known dimension of the known physical article and the physical dimension of the physical article that the CGR object represents. The CGR object is displayed in the AR environment in accordance with the virtual dimension.

[0018] In accordance with some implementations, a device includes one or more processors, a non-transitory memory, and one or more programs. In some implementations, the one or more programs are stored in the non-transitory memory and are executed by the one or more processors. In some implementations, the one or more programs include instructions for performing or causing performance of any of the methods described herein. In accordance with some implementations, a non-transitory computer readable storage medium has stored therein instructions that, when executed by one or more processors of a device, cause the device to perform or cause performance of any of the methods described herein. In accordance with some implementations, a device includes one or more processors, a non-transitory memory, and means for performing or causing performance of any of the methods described herein.

Description

[0019] Numerous details are described in order to provide a thorough understanding of the example implementations shown in the drawings. However, the drawings merely show some example aspects of the present disclosure and are therefore not to be considered limiting. Those of ordinary skill in the art will appreciate that other effective aspects and/or variants do not include all of the specific details described herein. Moreover, well-known systems, methods, components, devices and circuits have not been described in