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Augmented reality immersion adjustment

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ABSTRACT

This disclosure describes techniques to adjust the immersion level in an augmented reality (AR) environment. An input mechanism, e.g., a dial in the form of a wheel, a slider, buttons, etc. is provided on an AR device. The user can operate the dial to adjust the level of immersion in the AR environment. The AR environment is rendered based on the selected immersion level. The user can designate services and augmentation desired at each level of immersion, or such determination can be made automatically.

KEYWORDS

- Augmented reality (AR)
- AR glasses
- AR headset
- Input dial
- Augmentation level
- Immersion level

BACKGROUND

There are no easy techniques that are currently available to users to adjust the level of immersion in an augmented reality (AR) environment. For example, if a user wants to focus on a particular task while in an AR environment, the user may prefer a low immersion level such that only high priority items are rendered, while if the user is participating in an AR experience, e.g., a game, that includes audio and visual elements, the user may prefer a full immersion level where all augmentations are rendered.
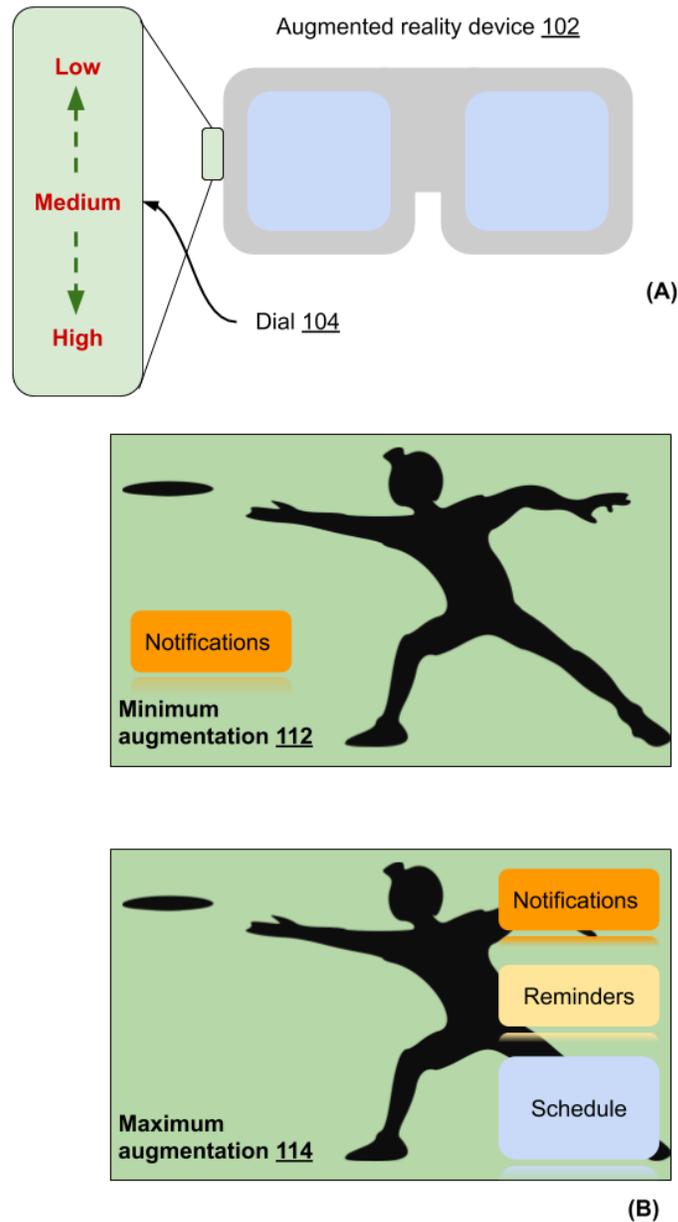
DESCRIPTION

Fig. 1: (A) Augmented reality device with dial; (B) Different levels of immersion

Fig. 1(A) illustrates an example of an augmented reality device (102) with a dial (104) that can be operated by a user to adjust the level of immersion in the augmented reality (AR) environment viewed using the device. For example, the dial can be provided using any suitable input mechanism such as a wheel, a slider, buttons, etc. The dial can adjust the level of

augmentation (audio and/or video) provided by the device. For example, the dial can include discrete settings (e.g., 3 levels "Low," "Medium," "High"; 5 levels; etc.) that specify the degree of immersion or can be operated to select from a continuous range of augmentation settings. Based on the level selected, the AR environment provided is adjusted automatically. In the example illustrated in Fig. 1, the dial can be turned to select one of the three levels provided.

Fig. 1(B) illustrates an AR environment with different levels of augmentation, selected based on the dial setting. For a low level of immersion (112), only elements with high priority are provided in the AR environment. For example, low-level immersion can include elements such as high priority notifications, navigation instructions, etc. Augmentations that are provided are lightweight with high opacity. For a high level of immersion (114), the environment is heavily augmented. For example, the augmented reality device can layer multiple service elements into the user's field of vision with highly transformed audio.

The rendering of the AR environment per the dial setting is performed via software. The dial provides a simple user interface to adjust the level of immersion. The specific elements that are rendered or excluded at different dial settings can be selected by the user, or can be determined automatically.

CONCLUSION

This disclosure describes techniques to adjust the immersion level in an augmented reality (AR) environment. An input mechanism, e.g., a dial in the form of a wheel, a slider, buttons, etc. is provided on an AR device. The user can operate the dial to adjust the level of immersion in the AR environment. The AR environment is rendered based on the selected immersion level. The user can designate services and augmentation desired at each level of immersion, or such determination can be made automatically.