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SYSTEM OF DIGITAL NAVIGATION FOR VISUALLY-IMPAIRED USER

ABSTRACT

A system is disclosed for navigating a digital space (such as a virtual view of a street) by a visually-impaired user. The visually impaired user may access the system using a stereophonic audio system. The system is configured to generate an audible ping from the user's location in a panoramic image that is configured to reach the user's ears based on the geometry of the image defined in a depth map. The system provides visualization on preview of the location for a visually-impaired user who practices echolocation, in a similar way as offered to sighted users. The method for digital navigation for visually-impaired users can be implemented in existing mapping software in a computing device.

BACKGROUND

Currently, there are software applications configured to provide panoramic views of streets and other geographical images of location to help guide a user. The current system is configured to extract text about the images and alternate text may be added for the images. However, this system could not be conveniently used by a visually-impaired user. Thus, there is a need for a system of digital navigation for the visually-impaired user. The system tends to provide visualization on preview of the location for the visually-impaired user who practices using echolocation, in a similar way as offered to sighted users.

DESCRIPTION

Disclosed herein is a system for navigating a digital space (such as a virtual view of a street) by a visually-impaired user using an application. The visually impaired user may access the system using a stereophonic audio system such as a pair of headphones. The system is configured to generate an audible ping from the user's location in a panoramic image that is configured to reach the user's ears based on the geometry of the image defined in a depth map.

The audible ping could create one or more echoes that reach the user's ears at different times based on the geometry defined in a depth map. The stereophonic sound could also help in pinpointing the direction and distance of objects in three dimensions for visually-impaired users. The system provides visualization on preview of the location for the visually-impaired user who practices echolocation, in a similar way as offered to sighted users.

The method for digital navigation for visually-impaired users can be implemented in existing mapping software in a computing device.