acquired. Then, it is determined whether or not the eye in the first image and the second image is an eye of a living body on the basis of the luminance value in the pupil area of the eye, by using the fact that retinal reflex is caused in the eye of a living body.

[0004]

Patent Literature 1: JP 2006-326326 A

SUMMARY

[0005]

In the art described in Patent Literature 1, when capturing an object only once, there is a possibility of erroneously authenticate an image in which light has been reflected on an eye. Further, in the art of Patent Literature 1, in the case of capturing an object twice, it is necessary to capture the object by irradiating the object with light coaxially with the optical axis of the camera and also capture the object by irradiating the object with light with an optical axis that is different from the optical axis of the camera. Therefore, a plurality of lighting devices are required. This causes a problem that it is difficult to suppress erroneous authentication in the case of using photographs, with a simple configuration.

[0006]

In view of the above, the present disclosure is to provide a determination device, a determination method, and a storage medium capable of solving a problem that it is difficult to suppress erroneous authentication in the case of using photographs or the like with a simple configuration.

[0007]

A determination device according to one aspect of the present disclosure is configured to include

an acquisition unit that acquires image data captured by using a flash in a state of being controlled such that a shape of the flash becomes a predetermined flash pattern, and

a determination unit that determines whether or not an imaging object is a living body on the basis of the acquired image data.

[0008]

Further, a determination method according to another aspect of the present disclosure includes, by an information processing device,

acquiring image data captured by using a flash in a state of being controlled such that a shape of the flash becomes a predetermined flash pattern; and

determining whether or not an imaging object is a living body on the basis of the acquired image data.

[0009]

Further, a storage medium according to another aspect of the present disclosure is a computer-readable storage medium storing thereon a program for causing an information processing device to execute processing to

acquire image data captured by using a flash in a state of being controlled such that a shape of the flash becomes a predetermined flash pattern, and

determine whether or not an imaging object is a living body on the basis of the acquired image data.

[0010]

With the configurations described above, the present disclosure is able to provide a determination device, a determination method, and a storage medium that enable suppression of erroneous authentication in the case of using photographs or the like, with a simple configuration.

BRIEF DESCRIPTION OF DRAWINGS

[0011]

Fig. 1 is a block diagram illustrating an exemplary configuration of an information processing device according to a first exemplary embodiment of the present invention.

Fig. 2 illustrates an exemplary arrangement of an imaging unit and a screen display unit.

Fig. 3 illustrates an example of an eye part in image data with a flash.

Fig. 4 illustrates an example of an eye part in image data without a flash.

Fig. 5 illustrates examples of image data with a flash and image data without a flash in the cases of an eye of a living body and a photograph.

Fig. 6 is a flowchart illustrating an exemplary operation of the information processing device according to the first exemplary embodiment of the present invention.

Fig. 7 is a block diagram illustrating an exemplary configuration of an information processing device according to a second exemplary embodiment of the present invention.

Fig. 8 illustrates an example of a flash pattern.

Fig. 9 illustrates an example of a flash pattern in image data.

Fig. 10 is an illustration for explaining exemplary processing of an extraction unit and a comparison and determination unit.