

CLAIMS

What is claimed is:

1. A computer-implemented method, comprising:
detecting one or more user interactions from a virtual reality (VR) device user
5 for initiating a service in a VR scenario of a VR application;
obtaining one or more eye physiological characteristics of the VR device user
for user identity authentication;
comparing the obtained one or more eye physiological characteristics with one
or more pre-stored eye physiological characteristics samples;
10 authenticating the VR device user if the one or more eye physiological
characteristics match at least a portion of the one or more pre-stored eye physiological
characteristics samples; and
communicating with a server that provides and performs the service.
- 15 2. The computer-implemented method of claim 1, wherein the one or more user
interactions include a gesture, a body movement, or a body posture.
3. The computer-implemented method of claim 1, wherein the one or more user
interactions include a voice command.
- 20 4. The computer-implemented method of claim 1, wherein the one or more eye
physiological characteristics include iris characteristics or eye print characteristics.
5. The computer-implemented method of claim 1, further comprising:
25 performing a bioassay process for detecting the user; and
presenting a notification in the VR scenario to notify the user to perform
biometric authentication if the user is detected based on the bioassay process.
6. The computer-implemented method of claim 5, wherein the bioassay process
30 includes eye-blinking recognition or heartbeat recognition.

7. The computer-implemented method of claim 1, further comprising presenting virtual guidance in the VR scenario to obtain the one or more eye physiological characteristics.
- 5 8. The computer-implemented method of claim 1, wherein the one or more eye physiological characteristics are obtained by an eye sensor and wherein the eye sensor includes a lens and one or more cameras.
9. The computer-implemented method of claim 8, wherein the lens is a macro lens.
- 10 10. The computer-implemented method of claim 8, wherein the one or more cameras are infrared cameras.
11. The computer-implemented method of claim 8, wherein the one or more cameras are paired with one or more LED lights.
- 15 12. A non-transitory, computer-readable medium storing one or more instructions executable by a computer system to perform operations comprising:
detecting one or more user interactions from a virtual reality (VR) device user
20 for initiating a service in a VR scenario of a VR application;
obtaining one or more eye physiological characteristics of the VR device user for user identity authentication;
comparing the obtained one or more eye physiological characteristics with one or more pre-stored eye physiological characteristics samples;
25 authenticating the VR device user if the one or more eye physiological characteristics match at least a portion of the one or more pre-stored eye physiological characteristics samples; and
communicating with a server that provides and performs the service.
- 30 13. The non-transitory, computer-readable medium of claim 12, wherein the one or more user interactions include a gesture, a body movement, or a body posture.

14. The non-transitory, computer-readable medium of claim 12, wherein the one or more user interactions include a voice command.
15. The non-transitory, computer-readable medium of claim 12, wherein the one or more eye physiological characteristics include iris characteristics or eye print characteristics.
16. The non-transitory, computer-readable medium of claim 12, further comprising:
performing a bioassay process for detecting the user; and
presenting a notification in the VR scenario to notify the user to perform biometric authentication if the user is detected based on the bioassay process.
17. A computer-implemented system, comprising:
one or more computers; and
one or more computer memory devices interoperably coupled with the one or more computers and having tangible, non-transitory, machine-readable media storing one or more instructions that, when executed by the one or more computers, perform one or more operations comprising:
detecting one or more user interactions from a virtual reality (VR) device user for initiating a service in a VR scenario of a VR application;
obtaining one or more eye physiological characteristics of the VR device user for user identity authentication;
comparing the obtained one or more eye physiological characteristics with one or more pre-stored eye physiological characteristics samples;
authenticating the VR device user if the one or more eye physiological characteristics match at least a portion of the one or more pre-stored eye physiological characteristics samples; and
communicating with a server that provides and performs the service.
18. The computer-implemented system of claim 17, wherein the one or more user interactions include a voice command.

19. The computer-implemented system of claim 17, wherein the one or more eye physiological characteristics include iris characteristics or eye print characteristics.
20. The computer-implemented system of claim 17, further comprising:
- 5 performing a bioassay process for detecting the user; and
presenting a notification in the VR scenario to notify the user to perform biometric authentication if the user is detected based on the bioassay process.