

CLAIMS

[Claim 1] An authentication device which authenticates a target comprising:

an output means which outputs a plurality of candidate responses to questions to the
5 target on a display device;

a response specification means which specifies a response to the question from among
the candidate responses based on a target's gaze in a face image captured by an imaging device
that captures a face image of the target;

10 a response judgment means which makes a correctness or incorrectness judgment of the
specified response;

a face authentication means which performs target's face authentication from the face
image captured by the imaging device;

a biometric determination means which performs target's biometrics determination
based on changes in the target's gaze detected from a plurality of the face image; and

15 a target authentication means which authenticates the target based on results of the
correctness or incorrectness judgment, the biometrics determination, and the face authentication.

[Claim 2] The authentication device according to claim 1, wherein

20 the response specification means obtains response time at which the target specified the
response,

the face authentication means obtains a result of the face authentication performed at the
same time as the response time, and

the target authentication means authenticates that the target is a living body matched by
the face authentication.

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[Claim 3] The authentication device according to claim 1 or 2, wherein

the biometric determination means detects a relative angle change of the gaze with
respect to the direction of a face while the target moves the gaze and selects a response, and
performs the target's biometrics determination.

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[Claim 4] The authentication device according to any one of claims 1 to 3, wherein

the output means outputs a plurality of candidate responses corresponding to the target-
specific questions authenticated by the face authentication on the display device.

[Claim 5] The authentication device according to any one of claims 1 to 4, wherein
the response specification means specifies a response based on the target's gaze in a first
face image captured by a first imaging device, and
5 the face authentication means performs target's face authentication from a second face
image captured by a second imaging device.

[Claim 6] An authentication system which authenticates a target comprising:
an imaging device which captures a face image of the target;
10 an output means which outputs a plurality of candidate responses to questions to the
target on a display device;
a response specification means which specifies a response to the question from among
the candidate responses based on a target's gaze in the captured face image;
a response judgment means which makes a correctness or incorrectness judgment of the
15 specified response;
a face authentication means which performs target's face authentication from the
captured face image;
a biometric determination means which performs target's biometrics determination
based on changes in the target's gaze detected from a plurality of the face image; and
20 a target authentication means which authenticates the target based on results of the
correctness or incorrectness judgment, the biometrics determination, and the face authentication.

[Claim 7] The authentication system according to claim 6, further comprising
a plurality of imaging devices which capture the face image of the target,
25 wherein the response specification means specifies a response based on the target's gaze
in a first face image captured by a first imaging device, and
the face authentication means performs target's face authentication from a second face
image captured by a second imaging device.

30 [Claim 8] An authentication method which authenticates a target comprising:
outputting a plurality of candidate responses to questions to the target on a display
device;
specifying a response to the question from among the candidate responses based on a

target's gaze in a face image captured by an imaging device that captures a face image of the target;

making a correctness or incorrectness judgment of the specified response;

performing target's face authentication from the face image captured by the imaging

5 device;

performing target's biometrics determination based on changes in the target's gaze

detected from a plurality of the face image; and

authenticating the target based on results of the correctness or incorrectness judgment, the biometrics determination, and the face authentication.

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[Claim 9] The authentication method according to claim 8, further comprising:

obtaining response time at which the target specified the response;

obtaining a result of the face authentication performed at the same time as the response time; and

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authenticating that the target is a living body matched by the face authentication.

[Claim 10] A program recording medium that stores an authentication program that is applied to a computer that authenticates a target, and causing the computer to execute:

an output process of outputting a plurality of candidate responses to questions to the
20 target on a display device;

a response specification process of specifying a response to the question from among the candidate responses based on a target's gaze in a face image captured by an imaging device that captures a face image of the target;

a response judgment process of making a correctness or incorrectness judgment of the
25 specified response;

a face authentication process of performing target's face authentication from the face image captured by the imaging device;

a biometric determination process of performing target's biometrics determination based on changes in the target's gaze detected from a plurality of the face image; and

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a target authentication process of authenticating the target based on results of the correctness or incorrectness judgment, the biometrics determination, and the face authentication.