



US009411419B2

(12) **United States Patent**
Kasahara et al.

(10) **Patent No.:** **US 9,411,419 B2**
(45) **Date of Patent:** **Aug. 9, 2016**

(54) **DISPLAY CONTROL DEVICE, DISPLAY CONTROL METHOD, AND PROGRAM**

(71) Applicant: **SONY CORPORATION**, Tokyo (JP)

(72) Inventors: **Shunichi Kasahara**, Kanagawa (JP);
Junichi Rekimoto, Kanagawa (JP)

(73) Assignee: **SONY CORPORATION**, Tokyo (JP)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 101 days.

(21) Appl. No.: **14/526,778**

(22) Filed: **Oct. 29, 2014**

(65) **Prior Publication Data**

US 2015/0130839 A1 May 14, 2015

(30) **Foreign Application Priority Data**

Nov. 13, 2013 (JP) 2013-234932

(51) **Int. Cl.**

G06T 19/00 (2011.01)
G06F 3/01 (2006.01)
G02B 27/01 (2006.01)

(52) **U.S. Cl.**

CPC **G06F 3/013** (2013.01); **G02B 27/017** (2013.01); **G02B 2027/014** (2013.01); **G02B 2027/0178** (2013.01); **G02B 2027/0187** (2013.01)

(58) **Field of Classification Search**

CPC G06T 19/00; G06F 3/01; G02B 27/01
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

6,222,583 B1 * 4/2001 Matsumura G01C 21/3635
345/619
7,015,951 B1 * 3/2006 Yoshigahara G01C 11/06
348/135
9,202,315 B2 * 12/2015 Kobayashi H04N 13/0018
2009/0213112 A1 * 8/2009 Zhu G06T 15/06
345/419
2011/0018868 A1 * 1/2011 Inoue A63F 13/10
345/419
2012/0212499 A1 * 8/2012 Haddick G02B 27/0093
345/589
2012/0327194 A1 * 12/2012 Shiratori G06F 3/011
348/47

FOREIGN PATENT DOCUMENTS

JP 2012-212345 A 11/2012

* cited by examiner

Primary Examiner — Todd Buttram

(74) *Attorney, Agent, or Firm* — Chip Law Group

(57) **ABSTRACT**

There is provided a display control device including a matching section configured to match a first image or sensor data output from a first imaging device or a sensor worn on a head of a first user, to a second image output from a second imaging device worn on a part other than the head of the first user, a sight estimation section configured to estimate a region corresponding to a sight of the first user in the second image, on the basis of a result of the matching, and a display control section configured to generate an image expressing the sight of the first user using the second image on the basis of a result of the estimation of the sight, and display the image expressing the sight of the first user toward a second user that is different from the first user.

12 Claims, 11 Drawing Sheets

