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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte YUJI KANEDA, MASAKAZU MATSUGU, and
KATSUHIKO MORI

Appeal 2015-005787
Application 12/781,728
Technology Center 2600

Before DEBRA K. STEPHENS, KEVIN C. TROCK, and
JESSICA C. KAISER, *Administrative Patent Judges*.

KAISER, *Administrative Patent Judge*.

DECISION ON APPEAL

Introduction

Appellants¹ appeal under 35 U.S.C. § 134(a) from a final rejection of claims 1–21. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

¹ According to Appellants, the real party in interest is Canon Kabushiki Kaisha. (App. Br. 2).

EXEMPLARY CLAIM

Claim 1, reproduced below, is illustrative of the claimed subject matter with disputed limitations emphasized:

1. An apparatus comprising:
 - a processor; and
 - a memory storing instructions that, when executed by the processor, cause the apparatus to:
 - detect a person's face from image data;
 - determine parameters dynamically based on a size of the detected face*, wherein the parameters are used for generating a feature amount;
 - set, in a region of the detected face, at least one region from which the feature amount is to be generated, based on the determined parameters;
 - generate the feature amount for the set region, based on the determined parameters; and
 - identify the detected face using the generated feature amount.

REJECTIONS

The Examiner made the following rejections:

Claims 1–4 and 7–21 stand rejected under 35 U.S.C. § 102(a) as being anticipated by Gritti (Tommaso Gritti et al., *Local Features based Facial Expression Recognition with Face Registration Errors* (2008)). (Final Act. 2–10).

Claims 5 and 6 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Gritti and Tian (US 2003/0133599 A1; published July 17, 2003). (Final Act. 10–12).

ISSUES

Issue 1: Did the Examiner err in finding Gritti discloses “determin[ing] parameters dynamically based on a size of the detected face,” as recited by claims 1 and 12?

Issue 2: Did the Examiner err in finding Gritti discloses “obtain[ing] a distance between two eyes in the detected face; determin[ing] parameters dynamically based on the obtained distance,” as recited by claims 17 and 18?

ANALYSIS

We have reviewed the Examiner’s rejections in light of Appellants’ arguments that the Examiner has erred. We disagree with Appellants’ conclusions. We adopt as our own the findings and reasons set forth by the Examiner in the Final Action (Final Act. 2–13) from which this appeal is taken and the findings and reasons set forth in the Examiner’s Answer in response to Appellants’ Appeal Brief (Ans. 13–19). We highlight and address specific findings and arguments for emphasis as follows.

Issue 1

Appellants argue the Examiner erred in finding Gritti discloses “determin[ing] parameters dynamically based on a size of the detected face,” as recited by claims 1 and 12. (App. Br. 6–8; Reply Br. 2–6). Specifically, Appellants argue the claimed “parameters are determined based on the size of the un-manipulated face,” i.e., “no manipulation of the size of the detected face is performed” (App. Br. 7 (citations omitted)), but in Gritti,

“the sizes of the faces are manipulated so that each face is re-sized to have a fixed distance between the two eyes” (Reply Br. 3–4; App. Br. 7).

The Examiner relies on both (1) resizing a scaled face (i.e., determining pixel resolution) (Ans. 14–15) and (2) Histogram of Oriented Gradients (“HOG”) features, as disclosing the recited “parameters” (*id.* at 16, 18). As to the first finding, Appellants argue “after [Gritti’s] scaling, the scaled images may be re-sized” (Reply Br. 3–4), but the claimed “parameters are determined based on the size of the un-manipulated face size,” i.e., the un-scaled image (App. Br. 7). As to the second finding, Appellants argue “dividing an image into cells is not the same as determining parameters based on a face size” (*id.* at 8). We are not persuaded.

Regarding the resized face (first finding), the Examiner finds, and we agree, Gritti detects a face by cropping a face from “an original digitized facial image” using “the distance between two eyes.” (Ans. 16). Indeed, Gritti discloses “scal[ing] the faces to a fixed distance between the two eyes,” and “[f]ace images of 108×147 pixels were cropped from original frames based on the location of the two eyes.” (Gritti § 2). Scaling the original face image to a fixed eye distance necessarily requires determining the original face image’s eye distance to determine how to scale to the fixed distance. The Examiner further finds, and we agree, Gritti’s cropped face “still need[s] to be resized to the smaller size 108×144 or the larger size 128×160.” (Ans. 14–15 (emphasis omitted) (citing Gritti § 3.1 n.1)). Specifically, Gritti teaches “face images are resized from default 112×160 pixels to 120×168, 108×144[,] or 128×160 pixels depending on the block [size].” (Gritti § 3.1 n.1). The Examiner further finds, and we agree, Gritti

“generat[es] HOG features/descriptors . . . based on the size of the resized facial image.” (Ans. 16 (citing Gritti § 3.1)).

Appellants’ argument that the claimed “parameters are determined based on the size of the un-manipulated face” (App. Br. 7) is not commensurate with the scope of the claim because the claims do not preclude determining parameters based on the size of a “manipulated face.” Because the claimed “detected face” may be a manipulated face, we agree with the Examiner’s finding that a “detected face” can be a cropped and resized face image that is further cropped and resized according to “the distance between the two eyes,” as disclosed in Gritti. (Ans. 14 (citing Gritti § 2), 16). We also agree with the Examiner’s finding that Gritti determines parameters by determining the resized pixel resolution (e.g., to 108×144 or 128×160 pixels) based on the size of Gritti’s cropped face. (Ans. 14–15 (citing Gritti § 3.1 n.1)). That is, Gritti’s pixel resolution, i.e., “parameters,” are based on the size of a face image cropped using eye distance.

Regarding HOG parameters, Appellants’ arguments (App. Br. 8) are not responsive to the Examiner’s findings because the Examiner does not rely on divided image cells to disclose the recited “parameters.” (Ans. 18). Instead, the Examiner relies on HOG features, which are ultimately calculated based on eye distance, to disclose the recited “parameters” (Ans. 16 (citing Gritti § 3.1), 18). We agree with the Examiner’s finding that Gritti determines the recited “parameters” by generating HOG features based on the size of a “cropped/resized facial image” (Ans. 18 (citing Gritti § 3.1)) that was cropped/resized “based on the location of the two eyes” of the face. (Ans. 17 (citing Gritti §§ 2, 4)). That is, Gritti’s HOG features (i.e., parameters) are based on the size of a face cropped and resized using eye

distance. Accordingly, we are not persuaded the Examiner erred in finding Gritti discloses “determin[ing] parameters dynamically based on a size of the detected face,” within the meaning of claims 1 and 12.

Issue 2

Appellants argue the Examiner erred in finding Gritti discloses “obtain[ing] a distance between two eyes in the detected face; determin[ing] parameters dynamically based on the obtained distance,” as recited by claims 17 and 18. (App. Br. 8–9; Reply Br. 2–6). Similar to Appellants’ arguments *supra*, Appellants argue Gritti “manipulates the size of the face image by fixing the distance between two eyes and then divides the image window including the resized face into cells,” but, Appellants argue, “dividing the window into cells does not teach or suggest determining parameters based on obtained distance . . . between two eyes.” (App. Br. 9 (emphasis omitted) (citations omitted)).

We are not persuaded. As discussed *supra*, the Examiner does not rely on Gritti’s divided image cells to disclose the claimed “parameters” and instead relies on determining pixel resolution and HOG features as disclosing the claimed “parameters.” (Ans. 18). Further, as discussed *supra*, we agree with the Examiner’s finding that Gritti ultimately determines pixel resolution and HOG features (i.e., parameters) “based on the resized facial image [resized] dynamically based on the distance between two eyes in the original facial image” (Ans. 19; *see* Ans. 14–15 (citing Gritti § 3.1 n.1), 18 (citing Gritti § 3.1)). Accordingly we are not persuaded the Examiner erred in finding Gritti discloses “obtain[ing] a distance between

two eyes in the detected face; determin[ing] parameters dynamically based on the obtained distance,” within the meaning of claims 17 and 18.

Remaining Claims

Appellants do not argue separate patentability for dependent claims 2–11, 13–16, and 19–21 which depend directly or indirectly from claims 1, 12, 17, and 18. (*See App. Br. 8–10*). For the reasons set forth above, therefore, we are not persuaded the Examiner erred in rejecting these claims.

Accordingly, we sustain the Examiner’s decision to reject claims 2–11, 13–16, and 19–21. *See 37 C.F.R. § 41.37(c)(1)(iv)*.

DECISION

The Examiner’s rejection of claims 1–4 and 7–21 under 35 U.S.C. § 102(a) as being anticipated by Gritti is affirmed.

The Examiner’s rejection of claims 5 and 6 under 35 U.S.C. § 103(a) as being unpatentable over Gritti and Tian is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED