

(12) International Application Status Report

Received at International Bureau: 30 March 2020 (30.03.2020)

Information valid as of: 31 August 2020 (31.08.2020)

Report generated on: 25 January 2021 (25.01.2021)

(10) Publication number:

WO2020/197494

(43) Publication date:

01 October 2020 (01.10.2020)

(26) Publication language:

English (EN)

(21) Application Number:

PCT/SG2020/050158

(22) Filing Date:

24 March 2020 (24.03.2020)

(25) Filing language:

English (EN)

(31) Priority number(s):

10201902701U (SG)

(31) Priority date(s):

26 March 2019 (26.03.2019)

(31) Priority status:

Priority document received (in compliance with PCT Rule 17.1)

10201902800S (SG)

28 March 2019 (28.03.2019)

Priority document received (in compliance with PCT Rule 17.1)

(51) International Patent Classification:

G06T 7/33 (2017.01); *G06K 9/62* (2006.01); *G06K 9/46* (2006.01); *G06F 16/532* (2019.01)

(71) Applicant(s):

AGENCY FOR SCIENCE, TECHNOLOGY AND RESEARCH [SG/SG]; 1 Fusionopolis Way, #20-10, Connexis North Tower, Singapore 138632 (SG) *(for all designated states)*

(72) Inventor(s):

YUAN, Miaolong; c/o PKM, Institute for Infocomm Research, 1 Fusionopolis Way, #21-01, Connexis (South Tower), Singapore 138632 (SG)

LI, Zhengguo; c/o PKM, Institute for Infocomm Research, 1 Fusionopolis Way, #21-01, Connexis (South Tower), Singapore 138632 (SG)

GAO, Wenchao; c/o PKM, Institute for Infocomm Research, 1 Fusionopolis Way, #21-01, Connexis (South Tower), Singapore 138632 (SG)

WAN, Kong Wah; c/o PKM, Institute for Infocomm Research, 1 Fusionopolis Way, #21-01, Connexis (South Tower), Singapore 138632 (SG)

YAU, Wei Yun; c/o PKM, Institute for Infocomm Research, 1 Fusionopolis Way, #21-01, Connexis (South Tower), Singapore 138632 (SG)

(74) Agent(s):

POH, Chee Kian Daniel; Marks & Clerk Singapore LLP, Tanjong Pagar Post Office, P O Box 636, Singapore 910816 (SG)

(54) Title (EN): PLACE RECOGNITION

(54) Title (FR): RECONNAISSANCE DE LIEU

(57) Abstract:

(EN): A method of determining which of a plurality of reference images has lighting conditions which most closely matches those of a query image, the method comprising, for each reference image: determining a set of matches between the reference image and the query image, wherein a match comprises a first feature in the query image and a second feature in the reference image, wherein the first and second features are both projections of the same point in three-dimensional space; and calculating a Zero-Normalized Cross Correlation for the determined set of matches, wherein the reference image corresponding to the set of matches having the highest value of Zero-Normalized Cross Correlation is determined to be the reference image with lighting conditions which most closely match those of the query image.

(FR): L'invention concerne un procédé permettant de déterminer quelle image d'une pluralité d'images de référence comprend des conditions d'éclairage qui correspondent le mieux à celles d'une image d'interrogation, ledit procédé consistant pour chaque image de référence à : déterminer un ensemble de correspondances entre l'image de référence et l'image d'interrogation, une correspondance comprenant une première caractéristique dans l'image d'interrogation et une seconde caractéristique dans l'image de référence, les première et seconde caractéristiques étant toutes deux des projections du même point dans un espace

tridimensionnel; et calculer une corrélation croisée normalisée à zéro pour l'ensemble déterminé de correspondances, l'image de référence correspondant à l'ensemble de correspondances ayant la valeur la plus élevée de corrélation croisée normalisée à zéro étant déterminée comme l'image de référence avec des conditions d'éclairage qui correspondent le mieux à celles de l'image d'interrogation.

International search report:

Received at International Bureau: 26 August 2020 (26.08.2020) [SG]

International Report on Patentability (IPRP) Chapter II of the PCT:

Not available

(81) Designated States:

AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, ZA, ZM, ZW

European Patent Office (EPO) : AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR

African Intellectual Property Organization (OAPI) : BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG

African Regional Intellectual Property Organization (ARIPO) : BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW

Eurasian Patent Organization (EAPO) : AM, AZ, BY, KG, KZ, RU, TJ, TM