

(12) International Application Status Report

Received at International Bureau: 27 December 2016 (27.12.2016)

Information valid as of: 01 August 2017 (01.08.2017)

Report generated on: 21 July 2019 (21.07.2019)

(10) Publication number:

WO2017/142183

(43) Publication date:

24 August 2017 (24.08.2017)

(26) Publication language:

Korean (KO)

(21) Application Number:

PCT/KR2016/015141

(22) Filing Date:

23 December 2016 (23.12.2016)

(25) Filing language:

Korean (KO)

(31) Priority number(s):

10-2016-0017484 (KR)

(31) Priority date(s):

15 February 2016 (15.02.2016)

(31) Priority status:

Priority document received (in compliance with PCT Rule 17.1)

(51) International Patent Classification:

G06F 19/00 (2011.01); **A61B 6/00** (2006.01); **A61B 6/03** (2006.01); **A61B 5/08** (2006.01); **A61B 5/091** (2006.01); **A61B 5/00** (2006.01); **A61B 5/113** (2006.01)

(71) Applicant(s):

SAMSUNG ELECTRONICS CO., LTD. [KR/KR]; 129, Samsung-ro, Yeongtong-gu Suwon-si Gyeonggi-do 16677 (KR) (*for all designated states*)

(72) Inventor(s):

OH, Ji-hun; #1107-1501 1075-10, Hyohaeng-ro Hwaseong-si Gyeonggi-do 18397 (KR)

NAM, Woo-hyun; #105-1506 119, Dongjak-daero 29-gil Dongjak-gu Seoul 06990 (KR)

PARK, Yong-sup; #103-201 280, Wangsimni-ro Seongdong-gu Seoul 04751 (KR)

(74) Agent(s):

HUH, Sung-Won; 3rd Floor, Leaders Bldg. 63, Seochojungang-ro Seocho-gu Seoul 06651 (KR)

(54) Title (EN): IMAGE PROCESSING APPARATUS, IMAGE PROCESSING METHOD, AND RECORDING MEDIUM RECORDING SAME

(54) Title (FR): APPAREIL DE TRAITEMENT D'IMAGE, PROCÉDÉ DE TRAITEMENT D'IMAGE ET SUPPORT D'ENREGISTREMENT ENREGISTRANT CELLE-CI

(54) Title (KO): 영상처리장치, 영상처리방법 및 이를 기록한 기록매체

(57) Abstract:

(EN): The present invention relates to an image processing apparatus, an image processing method, and a recording medium recording the same. The image processing apparatus may comprise: a storage unit including a standard database constructed on the basis of information on a certain anatomical entity; and at least one processor which acquires a local motion vector by registering a first medical image and a second medical image obtained by imaging an object including an anatomical entity, normalizes, for each of a plurality of regions of the anatomical entity, the local motion vector by using a predicted local motion vector generated from the standard database, and provides, for each of the plurality of regions, information on the state of the anatomical entity on the basis of the normalized local motion vector. Since the normalization is performed region by region, it is possible to distinguishably provide information on the difference value between a local motion vector of a pulmonary disease patient to be diagnosed and a predicted local motion vector of an ordinary person, generated from the standard database through statistical modeling using bio-information of patients.

(FR): La présente invention concerne un appareil de traitement d'image, un procédé de traitement d'image et un support d'enregistrement enregistrant celle-ci. L'appareil de traitement d'image peut comprendre : une unité de stockage comprenant une base de données standard construite sur la base d'informations concernant une certaine entité anatomique ; au moins un processeur qui acquiert un vecteur de mouvement local en enregistrant une première image médicale et une seconde image médicale obtenues en imageant un objet comprenant une entité anatomique, qui normalise, pour chacune d'une pluralité de régions de l'entité anatomique, le vecteur de mouvement local par utilisation d'un vecteur de mouvement local prédit, généré à partir de la base de données standard, et qui fournit, pour chacune de la pluralité de régions, des informations concernant l'état de l'entité anatomique

sur la base du vecteur de mouvement local normalisé. Étant donné que la normalisation est exécutée région par région, il est possible de fournir, de manière à pouvoir être distinguées, des informations concernant la valeur de différence entre un vecteur de mouvement local d'un patient souffrant d'une maladie pulmonaire à diagnostiquer et un vecteur de mouvement local prédit d'une personne ordinaire, générés à partir de la base de données standard par l'intermédiaire d'une modélisation statistique utilisant des bio-informations de patients.

(KO): 본 발명은 영상처리장치, 영상처리방법 및 이를 기록한 기록매체에 관한 것으로서, 영상처리장치는, 소정 해부학적 개체에 대한 정보에 기초하여 구축된 표준 데이터베이스를 포함하는 저장부와; 해부학적 개체를 포함하는 대상체를 촬영한 제1 의료영상 및 제2 의료영상을 정합하여 로컬 모션 벡터를 획득하고, 표준 데이터베이스로부터 생성되는 예측 로컬 모션 벡터를 이용하여 로컬 모션 벡터를 해부학적 개체의 복수의 영역별로 정규화하고, 정규화된 로컬 모션 벡터에 기초하여 해부학적 개체의 상태에 대한 정보를 복수의 영역별로 제공하도록 하는 적어도 하나의 프로세서를 포함할 수 있다. 이러한 영역별 정규화에 의하여, 진단 대상인 폐 질환 환자의 로컬 모션 벡터와 환자의 바이오 정보를 이용한 통계적 모델링을 통해 표준 데이터베이스로부터 생성되는 일반인의 예측 로컬 모션 벡터의 차이값에 대한 정보를 식별 가능하게 제공할 수 있다.

International search report:

Received at International Bureau: 06 April 2017 (06.04.2017) [KR]

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, JP, KE, KG, KH, KN, KP, 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, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, 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