Title (en)

METHOD AND SYSTEM FOR PURELY GEOMETRIC MACHINE LEARNING BASED FRACTIONAL FLOW RESERVE

Title (de)

VERFAHREN UND SYSTEM FÜR FRAKTIONSFLUSSRESERVE AUF DER BASIS VON REIN GEOMETRISCHEM MASCHINELLEM LERNEN

Title (fr)

PROCÉDÉ ET SYSTÈME POUR ÉVALUATION À BASE D'APPRENTISSAGE AUTOMATIQUE PUREMENT GÉOMÉTRIQUE DU FLUX DE RÉSERVE CORONAIRE

Publication

EP 3218872 A2 20170920 (EN)

Application

EP 15804080 A 20151116

Priority

- US 201462079641 P 20141114
- US 201462083373 P 20141124
- US 201514804609 A 20150721
- US 201514876852 A 20151007
- EP 2015076685 W 20151116

Abstract (en)

[origin: CN107427268A] A method and system for determining hemodynamic indices, such as fractional flow reserve (FFR), for a location of interest in a coronary artery of a patient are disclosed. Medical image data of a patient is received. Patient-specific coronary arterial tree geometry of the patient is extracted from the medical image data. Geometric features are extracted from the patient-specific coronary arterial tree geometry of the patient. A hemodynamic index, such as FFR, is computed for a location of interest in the patient-specific coronary arterial tree based on the extracted geometric features using a trained machine-learning based surrogate model. The machine-learning based surrogate model is trained based on geometric features extracted from synthetically generated coronary arterial tree geometries.

IPC 8 full level

G06T 7/00 (2017.01)

CPC (source: CN EP)

A61B 6/504 (2013.01 - CN EP); **A61B 6/5217** (2013.01 - CN EP); **G06T 7/0012** (2013.01 - CN EP); **G16H 50/50** (2018.01 - EP); A61B 6/032 (2013.01 - CN EP); G06T 2207/10072 (2013.01 - CN EP); G06T 2207/20081 (2013.01 - CN EP); G06T 2207/30101 (2013.01 - CN EP); G06T 2207/30104 (2013.01 - CN EP); G06V 40/14 (2022.01 - CN EP); G06V 2201/03 (2022.01 - CN EP)

Cited by

EP3489893A1; CN109829878A; US10758200B2

Designated contracting state (EPC)

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

Designated extension state (EPC)

BA ME

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