Title (en)

ARTIFICIAL INTELLIGENCE-BASED BASE CALLER WITH CONTEXTUAL AWARENESS

Title (de)

AUF KÜNSTLICHER INTELLIGENZ BASIERENDER BASISANRUFER MIT KONTEXTBEWUSSTSEIN

Title (fr)

APPELANT DE BASE À BASE D'INTELLIGENCE ARTIFICIELLE AVEC RECONNAISSANCE CONTEXTUELLE

Publication

EP 4315343 A1 20240207 (EN)

Application

EP 22720805 A 20220324

Priority

- US 202163169163 P 20210331
- US 202217687586 A 20220304
- US 2022021814 W 20220324

Abstract (en)

[origin: WO2022212180A1] A neural network processes sequencing images on a patch-by-patch basis for base calling. The sequencing images depict intensity emissions of a set of analytes. The patches depict the intensity emissions for a subset of the analytes and have undiverse intensity patterns due to limited base diversity. The neural network has convolution filters that have receptive fields confined to the patches. The convolution filters detect intensity patterns in the patches with losses in detection due to the undiverse intensity patterns and confined receptive fields. An intensity contextualization unit determines intensity context data based on intensity values in the images. The data flow logic appends the intensity context data to the sequencing images to generate intensity contextualized images. The neural network applies the convolution filters on the intensity contextualized images and generates base call classifications. The intensity context data in the intensity contextualized images compensates for the losses in detection.

IPC 8 full level

G16B 30/20 (2019.01); **G16B 40/20** (2019.01)

CPC (source: EP)

G16B 30/20 (2019.02); **G16B 40/20** (2019.02)

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

Designated validation state (EPC)

KH MA MD TN

DOCDB simple family (publication)

WO 2022212180 A1 20221006; AU 2022248999 A1 20230202; CA 3183578 A1 20221006; CN 115803816 A 20230314; EP 4315343 A1 20240207

DOCDB simple family (application)

US 2022021814 W 20220324; AU 2022248999 A 20220324; CA 3183578 A 20220324; CN 202280005054 A 20220324; EP 22720805 A 20220324