Title (en)
    PREDICTION DEVICE AND METHOD

Title (de)
    VORHERSAGEVORRICHTUNG UND -VERFAHREN

Title (fr)
    DISPOSITIF ET PROCEDE DE PREDICTION

Publication
    EP 4004824 A1 20220601 (FR)

Application
    EP 20774881 A 20200728

Priority
    • FR 1908665 A 20190731
    • EP 2020071207 W 20200728

Abstract (en)
    [origin: WO2021018865A1] The embodiments of the invention provide a device for predicting (100) the value of a variable intended to be used by
    a control system implemented on a computer, the variable depending on several parameters, the parameters comprising a non-explicit parameter.
    Advantageously, the prediction device comprises a first predictor (101) based on a neural network configured to calculate an estimate of the non-
    explicit parameter and a second predictor (102) based on a neural network configured to calculate an estimate of the value of the variable from
    the estimate of the non-explicit parameter, the two predictors (101, 102) receiving an input dataset, each neural network being associated with a
    weight array. The prediction device is configured to apply a plurality of iterations of a single learning function to the two predictors (101, 102), the
    learning function comprising: a forward propagation block for calculating, based on input data from the two predictors (101,102), the gradient of a
    minimisation function of a cost function of the first predictor (101); and a backpropagation block (32) for updating the weights of the neural networks
    of the two predictors by backpropagating the gradients calculated by the forward propagation block. The prediction device (100) estimates the value
    of the variable to be predicted at a future instant, after the iterations of the learning function, by applying input data to the neural networks of the two
    predictors (101, 102) and using the weights updated by the learning function.

IPC 8 full level
    G06N 3/04 (2006.01); **G06N 3/08** (2006.01)

CPC (source: EP US)
    G06N 3/045 (2023.01 - EP); **G06N 3/084** (2013.01 - EP US); G06N 3/048 (2023.01 - EP)

Citation (search report)
    See references of WO 2021018865A1

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

DOCDB simple family (publication)
    WO 2021018865 A1 20210204; AU 2020319653 A1 20220310; EP 4004824 A1 20220601; FR 3099612 A1 20210205; FR 3099612 B1 20221216;
    US 2022277201 A1 20220901

DOCDB simple family (application)
    EP 2020071207 W 20200728; AU 2020319653 A 20200728; EP 20774881 A 20200728; FR 1908665 A 20190731;
    US 202017631487 A 20200728