

Title (en)  
METHOD AND APPARATUS FOR QUANTIZATION, ADAPTIVE BLOCK PARTITIONING AND CODEBOOK CODING FOR NEURAL NETWORK MODEL COMPRESSION

Title (de)  
VERFAHREN UND VORRICHTUNG ZUR QUANTISIERUNG, ADAPTIVEN BLOCKPARTITIONIERUNG UND CODEBUCH-CODIERUNG FÜR KOMPRESSIION EINES MODELLS EINES NEURONALEN NETZES

Title (fr)  
PROCÉDÉ ET APPAREIL DE QUANTIFICATION, DE PARTITIONNEMENT DE BLOC ADAPTATIF ET DE CODAGE DE LIVRE DE CODES POUR COMPRESSION DE MODÈLE DE RÉSEAU NEURONAL

Publication  
**EP 4062375 A4 20221228 (EN)**

Application  
**EP 20890921 A 20201119**

Priority  

- US 201962939054 P 20191122
- US 201962939057 P 20191122
- US 201962939949 P 20191125
- US 201962947236 P 20191212
- US 202017099202 A 20201116
- US 2020061258 W 20201119

Abstract (en)  
[origin: WO2021102125A1] A method of quantization, adaptive block partitioning and codebook coding for neural network model compression, is performed by at least one processor and includes determining a saturated maximum value of a multi-dimensional tensor in a layer of a neural network, and a bit depth corresponding to the saturated maximum value, and clipping weight coefficients in the multi-dimensional tensor to be within a range of the saturated maximum value. The method further includes quantizing the clipped weight coefficients, based on the bit depth, and transmitting, to a decoder, a layer header including the bit depth.

IPC 8 full level  
**H04N 19/96** (2014.01); **G06N 3/04** (2006.01); **G06N 3/08** (2006.01); **H04N 19/119** (2014.01); **H04N 19/70** (2014.01); **H04N 19/91** (2014.01)

CPC (source: EP KR)  
**G06N 3/08** (2013.01 - EP KR); **H04N 19/119** (2014.11 - KR); **H04N 19/124** (2014.11 - KR); **H04N 19/129** (2014.11 - KR); **H04N 19/70** (2014.11 - KR); **G06N 3/045** (2023.01 - EP)

Citation (search report)  

- [I] US 2019347550 A1 20191114 - JUNG SANGIL [KR], et al
- [A] AL-HAMI MO'TAZ ET AL: "Methodologies of Compressing a Stable Performance Convolutional Neural Networks in Image Classification", NEURAL PROCESSING LETTERS, KLUWER ACADEMIC PUBLISHERS, NORWELL, MA, US, vol. 51, no. 1, 20 July 2019 (2019-07-20), pages 105 - 127, XP037048818, ISSN: 1370-4621, [retrieved on 20190720], DOI: 10.1007/S11063-019-10076-Y
- See references of WO 2021102125A1

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 2021102125 A1 20210527**; CN 113795869 A 20211214; CN 113795869 B 20230818; EP 4062375 A1 20220928; EP 4062375 A4 20221228; JP 2022533307 A 20220722; JP 7337950 B2 20230904; KR 20210136123 A 20211116

DOCDB simple family (application)  
**US 2020061258 W 20201119**; CN 202080033543 A 20201119; EP 20890921 A 20201119; JP 2021559625 A 20201119; KR 20217033218 A 20201119