

Title (en)

NON-VOLATILE MEMORY DIE WITH DEEP LEARNING NEURAL NETWORK

Title (de)

NICHTFLÜCHTIGE SPEICHERMATRIX MIT TIEFENLERNENDEM NEURONALEN NETZ

Title (fr)

PUCE DE MÉMOIRE NON VOLATILE À RÉSEAU NEURONAL À APPRENTISSAGE PROFOND

Publication

EP 3756186 A2 20201230 (EN)

Application

EP 19888248 A 20190906

Priority

- US 201816212586 A 20181206
- US 201816212596 A 20181206
- US 2019050105 W 20190906

Abstract (en)

[origin: WO2020117348A2] Exemplary methods and apparatus are provided for implementing a deep learning accelerator (DLA) or other neural network components within the die of a non-volatile memory (NVM) apparatus using, for example, under-the-array circuit components within the die. Some aspects disclosed herein relate to configuring the under-the-array components to implement feedforward DLA operations. Other aspects relate to backpropagation operations. Still other aspects relate to using an NAND-based on-chip copy with update function to facilitate updating synaptic weights of a neural network stored on a die. Other aspects disclosed herein relate to configuring a solid state device (SSD) controller for use with the NVM. In some aspects, the SSD controller includes flash translation layer (FTL) tables configured specifically for use with neural network data stored in the NVM.

IPC 8 full level

G11C 11/56 (2006.01)

CPC (source: CN EP)

G06N 3/048 (2023.01 - CN EP); **G06N 3/063** (2013.01 - CN EP); **G06N 3/084** (2013.01 - CN EP)

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 2020117348 A2 20200611; **WO 2020117348 A3 20201210**; CN 112154460 A 20201229; CN 112154460 B 20240528; CN 117669663 A 20240308; EP 3756186 A2 20201230; EP 3756186 A4 20210602; EP 3789925 A1 20210310

DOCDB simple family (application)

US 2019050105 W 20190906; CN 201980006556 A 20190906; CN 202311718118 A 20190906; EP 19888248 A 20190906; EP 20178429 A 20190906