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(54) Title of the invention : HYBRID MEMORY CUBEORIENTED IMAGE CLASSIFICATION USING CONVOLUTIONAL NEURAL NETWORK

(51) International classification :G06N0003040000, G06K0009620000, G06Q0010100000, G06N0003080000, G06K0009000000	(71)Name of Applicant : 1)MR. V ASHOK KUMAR Address of Applicant : ASSISTANT PROFESSOR, COMPUTER SCIENCE AND ENGINEERING, VEL TECH RANGARAJAN DR. SAGUNTHALA R&D INSTITUTE OF SCIENCE AND TECHNOLOGY, CHENNAI, TAMIL NADU 600062. ---------- --------— 2)MR. HEMANT KUMAR 3)DR. K VIJILA RANI 4)DR. S SUGUMARAN 5)MS. R. ASMITHA SHREE 6)DR. G. KIRUTHIGA 7)MS. D. NIRMALA 8)MS. R. NITHYA 9)DR. S. SREE PRIYA Name of Applicant : NA Address of Applicant : NA (72)Name of Inventor : 1) MR. V ASHOK KUMAR Address of Applicant : ASSISTANT PROFESSOR, COMPUTER SCIENCE AND ENGINEERING, VEL TECH RANGARAJAN DR. SAGUNTHALA R&D INSTITUTE OF SCIENCE AND TECHNOLOGY, CHENNAI, TAMIL NADU 600062. ---------- --------— 2)MR. HEMANT KUMAR Address of Applicant :ASSISTANT PROFESSOR, INFORMATION TECHNOLOGY, UNIVERSITY INSTITUTE OF ENGINEERING AND TECHNOLOGY, CHHATRAPATI SHAHU JI MAHARAJ UNIVERSITY, KANPUR, UTTAR PRADESH 208024 --------- --- ---- 3)DR. K VIJILA RANI Address of Applicant :ASSISTANT PROFESSOR, DEPARTMENT OF ELECTRONICS AND COMMUNICAITON ENGINEERING, UDAYA SCHOOL OF ENGINEERING, VELLAMODI, TAMIL NADU 629204 --------- -------- 4)DR. S SUGUMARAN Address of Applicant :PROFESSOR, DEPARTMENT OF ELECTRONICS AND COMMUNICAITON ENGINEERING, VISHNU INSTITUTE OF TECHNOLOGY, KOVVADA, ANDHRA PRADESH 534202 -------- -------- 5)MS. R. ASMITHA SHREE Address of Applicant :ASSISTANT PROFESSOR, DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING, SRI KRISHNA COLLEGE OF TECHNOLOGY, KOVAIPUDUR, COIMBATORE, TAMIL NADU 641042. -------- --------- 6)DR. G. KIRUTHIGA Address of Applicant :ASSOCIATE PROFESSOR, DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING, IES COLLEGE OF ENGINEERING, THRISSUR, KERALA 680551. ---------- ---------- 7)MS. D. NIRMALA Address of Applicant :ASSISTANT PROFESSOR, DEPT.OF COMPUTER SCIENCE AND ENGINEERING, SRI KRISHNA COLLEGE OF TECHNOLOGY, KOVAIPUDUR, COIMBATORE, TAMIL NADU 641042 --------- --------— 8)MS. R. NITHYA Address of Applicant :ASSISTANT PROFESSOR, DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING, BANNARI AMMAN INSTITUTE OF TECHNOLOGY, SATHYAMANGALAM, TAMIL NADU 638401 --------- --------— 9)DR. S. SREE PRIYA Address of Applicant :ASSISTANT PROFESSOR DEPARTMENT OF EEE ARUNACHALA COLLEGE OF ENGINEERING FOR WOMEN, MANAVILAI, TAMIL NADU 629203 --------- --------—
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(57) Abstract :
In this present invention, The project invents the adoption of convolutional neural network model, a deep learning algorithm on a hybrid memory cube. The adoption is conducted to accelerate the process of classification of huge brain tumour images. The hardware acceleration enables fastest classification than other conventional simulation based or hardware-oriented designs.

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Patent Search

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Abstract:

In this present invention, The project invents the adoption of convolutional neural network model, a deep learning algorithm on a hybrid memory cube. The adoption is conducted to accelerate the process of classification of huge brain tumour images. The hardware acceleration enables fastest classification than other conventional simula based or hardware-oriented designs.

Complete Specification

"HYBRID MEMORY CUBEORIENTED IMAGE CLASSIFICATION USING CONVOLUTIONAL NEURAL NETWORK"
FIELD OF THE INVENTION
The present invention relates to the field of Computer science. In this present invention, The project invents the adoption of convolutional neural network model, a deep learning algorithm on a hybrid memory cube. The adoption is conducted to accelerate the process of classification of huge brain tumour images. The hardware accelerat enables fastest . classification than other conventional simulation based or hardware-oriented designs.
BACKGROUND OF THE INVENTION
[0001] Background description includes information that may be useful in understanding the present invention. It is not an admission that any of the information provid herein is prior art or relevant to the presently claimed invention, or that any publication specifically or implicitly referenced is prior art.
|0002| Computing is not as critical for deep learning workloads, because lots of data is reused. FPGAs, GPUs, and even some CPUs can all manage these workloads, but deep learning approaches, especially specialised ones, are ultimately more powerful when it comes to performance per watt. The aim is to employ a custom multiplier a accumulator structure within the HMC that will allow for a great deal of memory bandwidth and energy usage preservation, which is exactly what a lot of the new deep learning chip startups have discovered.
[0003] It should be acknowledged that HMC is not the only memory technology available on the market, and that more stacked memory products will be coming to the market. The Pascal GPU architecture includes HBM, an AMD-backed project. With

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