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(54) Title: SYSTEM AND METHOD FOR PARALLELIZING AND ACCELERATING LEARNING MACHINE TRAINING AND CLASSIFICATION USING A MASSIVELY PARALLEL ACCELERATOR

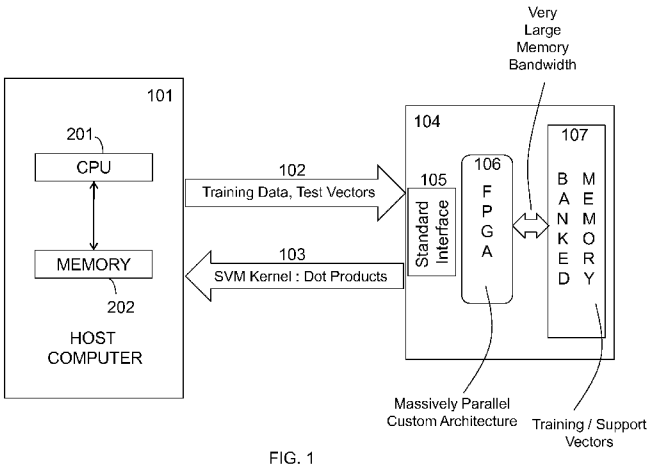

FIG. 1

(57) Abstract: A method system for training an apparatus to recognize a pattern includes providing the apparatus with a host processor executing steps of a machine learning process; providing the apparatus with an accelerator including at least two processors; inputting training pattern data into the host processor; determining coefficient changes in the machine learning process with the host processor using the training pattern data; transferring the training data to the accelerator; determining kernel dot-products with the at least two processors of the accelerator using the training data; and transferring the dot-products back to the host processor.

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER

G06F 15/16(2006.01)i, G06F 9/46(2006.01)i, G06F 13/00(2006.01)i

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC : G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models since 1975

Japanese utility models and applications for utility models since 1975

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO Internal), Google, YesKisti

keywords: dot-product, pattern, machine learning, training, accelerator

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 07219085 B2 (BUCK, I. A. et al.) 15 May 2007 See abstract, figures 5-6, and claims 1-35.	1-21
A	US 20040133763 A1 (MATHUR, C. et al.) 8 July 2004 See abstract, figure 3, and claims 1-27.	1-21
A	US 20070294768 A1 (MOSKOVITCH, R. et al.) 20 December 2007 See abstract and claims 1-17.	1-21

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

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"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

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"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents,such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
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Information on patent family members

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