7/25/24, 8:53 AM MNIST Digit Classification using Parallelised Convolutional Neural Network | IEEE Conference Publication | IEEE Xplore IEEE.org IEEE Xplore IEEE SA **IEEE Spectrum** More Sites Donate Cart Create Account Personal Sign In -+) Access provided by: Sign Out Browse ✓ My Settings ✓ Help ✓ PSG Inst of Tech & Applied Research Access provided by: Sign Out PSG Inst of Tech & Applied Research All Q ADVANCED SEARCH Conferences > 2023 4th International Confer...

MNIST Digit Classification using Parallelised Convolutional Neural Network

Publisher: IEEE

🔓 PDF

Cite This

N. Aravindhraj; V. Vilasini; S Kiruthik Vishaal; R Jaiprakash; R Cibi Siddaarth All Authors •••



Abstract

- **Document Sections**
- I. Introduction
- II. Literature Survey
- III. Why Convolutional Neural Network In MNIST Model
- IV. Profiling
- V. Message Passing Interface
- Show Full Outline -
 - Authors
 - Figures
 - References
 - Keywords

Metrics

More Like This

Abstract:

Downl

PDF

A program or piece of computer software is often built using serial computing techniques. In simple terms, a problem's solution is created by breaking it down into smalle... **View more**

Metadata Abstract:

A program or piece of computer software is often built using serial computing techniques. In simple terms, a problem's solution is created by breaking it down into smaller instructions, which are then each individually carried out by a computer's Central Processing Unit (CPU). These modular instructions are first queued and then carried out one by one. Due to the fact that only one instruction was being performed at a time, this was a problem that could be plausibly argued to need to be solved in the computing industry. Hence, parallel computing is employed to benefit from serial computing. Using many processing elements simultaneously to solve a problem or carry out an instruction is known as parallel computing. Every operation is run or processed simultaneously, and problems are divided up into discrete instructions and solved that way. The number of Central Processing Units (CPU) in large-scale supercomputers is continually increasing, and parallelism is a key component of all modern supercomputer architectures. A deep learning technique called the Convolutional Neural Network (CNN) learns directly from the data. When dense layers are added, it transforms into a sizable polynomial time approximation technique. The Convolutional Neural Network (CNN) method will run faster and be greatly improved when it is parallelized. This strategy can be built on top of several convolution neural network technique to find numbers in images is MNIST classification.

Published in: 2023 4th International Conference on Electronics and Sustainable Communication Systems (ICESC)

Publisher: IEEE

Date of Conference: 06-08 July 2023

Date Added to IEEE Xplore: 01 August 2023

DOI: 10.1109/ICESC57686.2023.10193142