amd / OpenCL-caffe

This is a Experimental version of OpenCL by AMD Research, we now recommend you to use The official BVLC Caffe OpenCL branch is over at Caffe branch now at https://github.com/BVLC/caffe/tree/opencl

3,236 commits **3** branches **0** releases **124** contributors

Branch: **stable** New pull request Create new file Upload files Find file Clone or download

gstoner committed on **GitHub** Update README.md Latest commit `41805c8` on 24 Jul 2016

cmake	add find path for AMDAPPSDK3.0 and addes src/caffe/CMakeLists.txt	2 years ago
data	[example] image classification web demo	3 years ago
docs	Fix path to mnist_autoencoder.prototxt	2 years ago
examples	Port the softmax layer	2 years ago
include/caffe	Switch to using batched image scheme as default. previously was using…	2 years ago
matlab	Update ilsvrc_2012_mean.mat to W x H x C, update demo and add comments	2 years ago
models	This is a test layer	2 years ago
python	Travis scripts for python3 and pytest for cmake. Also fixes CUDA CMak…	2 years ago
scripts	Travis scripts for python3 and pytest for cmake. Also fixes CUDA CMak…	2 years ago
src	update some uncomment	2 years ago

tools	Add the change in tools/	2 years ago
.Doxyfile	update doxygen config to stop warnings	3 years ago
.gitignore	update gitignore	2 years ago
.travis.yml	Travis scripts for python3 and pytest for cmake. Also fixes CUDA CMak…	2 years ago
CMakeLists.txt	Travis scripts for python3 and pytest for cmake. Also fixes CUDA CMak…	2 years ago
CONTRIBUTORS.md	clarify the license and copyright terms of the project	3 years ago
INSTALL.md	replace bundled install instructions with link to site	3 years ago
LICENSE	update Readme and License file	2 years ago
Makefile	remove all cuda related flags in Makefile	2 years ago
Makefile.config	Removed unused variable in base_conv_layer	2 years ago
Makefile.config.example	Add commented out helpers for homebrew users	2 years ago
README.md	Update README.md	10 months ago
caffe.cloc	[fix] stop cloc complaint about cu type	3 years ago

README.md

#This was experimental branch of Caffe for OpenCL, we know recommend you use the now official OpenCL port of Caffe in BVLC GitHub Repo at https://github.com/BVLC/caffe/tree/opencl

###OpenCL Caffe Experimental branch by AMD Reserach- No new development is happing on it.

This is an OpenCL implementation of Caffe, a mainstream DNN framework (https://github.com/BVLC/caffe). It includes a largely complete Caffe feature set as of August 2015. The project is under active development to improve performance and add new features. Contributions from the community are welcome.

OpenCL (https://en.wikipedia.org/wiki/OpenCL) is an open standard parallel programming language for heterogeneous platforms. OpenCL is supported by a variety of commercial chip manufacturers.

####Branches We have three branches in this repo.

-stable, the stable branch for users

-dev, the developer branch, we encourage people to contribute on this branch

-master, the original Caffe's master branch against which our code is synchronized.

####Design features -All Caffe layers ported to OpenCL

-Performance improvement by batched implementation for conv layer based on clBLAS

-The user can choose the optimal batch number depending on H/W properties, image size and minibatch size

-Supports OpenCL 2.0, 1.2

-Implemented in C++ and OpenCL, maintaining the same interfaces as the original Caffe

-Users can directly run DNN models: AlexNet, VGG-16 and VGG-19

Note: More features are planned in the near future. Currently this implementation has been verified and tuned on AMD devices (CPUs/GPUs/APUs). Compatibility across different chip manufacturers will be considered for future addition.

####Performance

We intend to keep updating the latest performance as we make optimizations. Fury results are preliminary and are actively being improved.

- Training speed (Model: AlexNet, minibatch size 128)

Platform	Speed (images per second)

AMD W9100 & A10-7850k	255
AMD R9 Fury & A10-7850k	261
AMD R290X @1000MHz & A10-7850k	268
AMD S9150 @900MHz & Xeon E5-2640	227

- Recognition speed (Model: AlexNet, minibatch size 128)

Platform	Speed (images per second)
AMD W9100 & A10-7850k	590
AMD R9 Fury & A10-7850k	699
AMD R290X @1000MHz & A10-7850k	606
AMD S9150 @900MHz & Xeon E5-2640	452

####Wiki For more information on how to install, use or contribute to this code base, please visit our wiki page: https://github.com/amd/OpenCL-caffe/wiki

#Contributors Junli Gu, Yibing Liu, Yuan Gao, Maohua Zhu

We thank Mauricio Breternitz, Hanjin Chu and Greg Stoner for their technical suggestions and support.

If you have any questions, please send an email to Junli.Gu@amd.com

###Support needed As an open source project, we hope to maintain an open dynamics and sharing culture. We encourage the contribution and support from the community to improve it together.

###License The original Caffe is provided in the BSD 2-Clause license open source license. The OpenCL ports written by AMD is covered by AMD license. We encourage the contribution and support from external, your contribution will be covered

either by BSD 2-Clause license or whichever your preferred license.

Original Caffe information

Caffe

Caffe is a deep learning framework made with expression, speed, and modularity in mind. It is developed by the Berkeley Vision and Learning Center (BVLC) and community contributors.

Check out the project site for all the details like

- DIY Deep Learning for Vision with Caffe
- Tutorial Documentation
- BVLC reference models and the community model zoo
- Installation instructions

and step-by-step examples.

Please join the caffe-users group or gitter chat to ask questions and talk about methods and models. Framework development discussions and thorough bug reports are collected on Issues.

Happy brewing!

License and Citation

Caffe is released under the BSD 2-Clause license. The BVLC reference models are released for unrestricted use.

Please cite Caffe in your publications if it helps your research:

```
@article{jia2014caffe,
  Author = {Jia, Yangqing and Shelhamer, Evan and Donahue, Jeff and Karayev, Sergey and Long, Jonathan and
  Journal = {arXiv preprint arXiv:1408.5093},
  Title = {Caffe: Convolutional Architecture for Fast Feature Embedding},
  Year = {2014}
}
```