SIEMENS EDA

AC Machine Learning **Release Notes**

Software Version v1.5
October 2021

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Release 1.5

The following topics describes the changes that were made to the *Algorithmic C Machine Learning* (*AC ML)* library since the last release.

Enhancements

System Level Design

Added two examples that demonstrate bringing the accelerator into a system level design.

In "host_code_design" the stimulus comes from a program running in the SystemC testbench, which drives register operations to the slave side of the accelerator and accesses the shared memory.

In "processor_design", the same stimulus prorgam is run on an embedded processor. Since the design have much hardware in common, the hardware source directory, hardware_sources, is here and is shared by the processor_design and host_code_design.

In order to run these examples you will need to source the script "set_rocket_vars" in addition to the "set_vars" script documented in the HLS_SEMINAR_2021/README.txt. Move up to the directory containing HLS_SEMINIAR_2021 and do the following:

Example for C-Shell users:

source ../set_vars.csh

source ../set_rocket_vars.csh

Example for Bourne Shell users:

. ../set_vars.sh

. ../set_rocket_vars.sh

Support for Bourne Shell

Added Bourne-shell variations of the “set_vars” scripts. To download the third-party software required to run the examples in HLS_SEMINAR_2021, you need to move to the directory containing HLS_SEMINAR_2021 and do the following:

Example for C-Shell users:

source ../set_vars.csh

Example for Bourne Shell users:

. ../set_vars.sh

Corrected Issues

Add switch to usage of “wget” in the “set_vars” scripts to avoid certificate issues with the Accellera SystemC download.

Release 1.4

The following topics describes the changes that were made to the *Algorithmic C Machine Learning* (*AC ML)* library since the last release.

Enhancements

Added the presentation material from the HLS Seminar 2021 as

Early_Design_and_Validation_of_an_AI_Accelerator.pdf

Corrected Issues

N/A

Release 1.0.3

The following topics describes the changes that were made to the *Algorithmic C Machine Learning* (*AC ML)* library since the last release.

Enhancements

N/A

Corrected Issues

Added DPRAM.h memory model.

Release 1.0.2

The following topics describes the changes that were made to the *Algorithmic C Machine Learning* (*AC ML)* library since the last release.

Enhancements

N/A

Corrected Issues

Added in several files that were missing from the distribution.

Note that the data file holding the kernel weights is a gzip-compressed file to work with github. The Makefiles will copy all data files to the current directory (and unzip) before running.

Release 1.0.1

The following topics describes the changes that were made to the *Algorithmic C Machine Learning* (*AC ML)* library since the last release.

Enhancements

A C-Shell script ‘set_vars.csh’ has been added. Sourcing this script in your shell will download/build all of the open-source projects required to compile and simulate the DVCON_2021 reference design example.

Corrected Issues

The following bugs were fixed:

- N/A

Release 1.0.0

The following topics describes the changes that were made to the *Algorithmic C Machine Learning* (*AC ML)* library since the last release. This release is the first release of this library and contains a reference design showing ML implemented in C++ with SystemC MatchLib interfaces.

Enhancements

N/A

Corrected Issues

N/A

Supported Compilers

The AC Machine Learning package requires a C++ compiler that supports the C++11 or newer language standard.