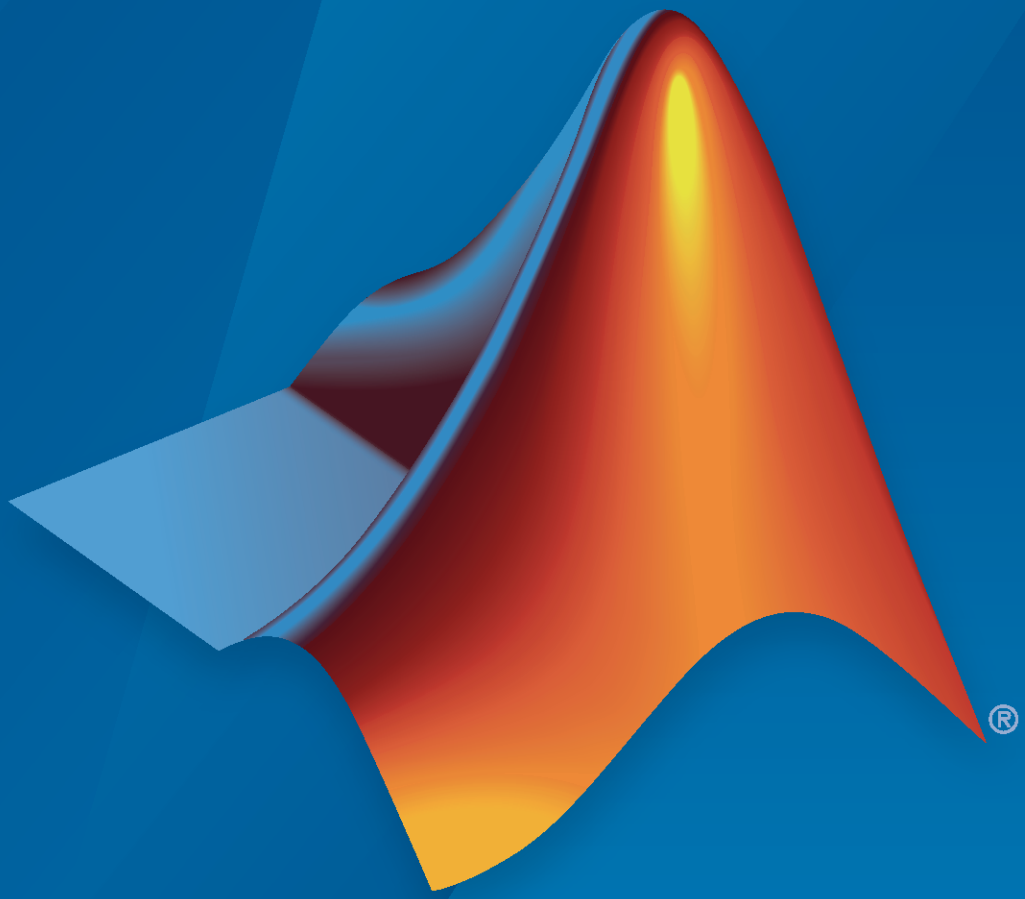
Deep Learning HDL Toolbox™ Release Notes



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Contents

R2020b

Introducing Deep Learning HDL Toolbox: Prototype and implement deep learning networks on FPGAs and SoCs 1-2

Prototype on FPGAs 1-2

Custom series network support 1-2

Portable Verilog and VHDL code 1-2

Tune user-configurable parameters 1-2

Custom board support 1-2

Performance estimation and profiling 1-2

Hardware Support 1-2

Support Package for Intel FPGA and SoCs 1-3

Support Package for Xilinx FPGA and SoCs 1-3

R2020b

Version: 1.0

New Features

Introducing Deep Learning HDL Toolbox: Prototype and implement deep learning networks on FPGAs and SoCs

With Deep Learning HDL Toolbox, you can prototype and implement deep learning networks on FPGAs and SoCs. Deploy and run deep learning networks on supported Xilinx® and Intel® FPGA and SoC devices. Improve deep learning network design, performance, and resource utilization by using profiling and estimating tools to explore tradeoffs and customize the network. Using HDL Coder™, you can generate HDL and an IP core to target FPGAs or SoCs.

Prototype on FPGAs

Use MATLAB® and fixed bitstreams to compile, deploy, and run inference for pretrained series networks on target Intel and Xilinx FPGA and SoC boards. For more information, see “Prototype Deep Learning Networks on FPGA”.

Custom series network support

Compile and deploy your custom series networks using the same fixed-bitstreams as the pre-trained networks. For more information, see “Prototype Deep Learning Networks on FPGA and SoCs Workflow”.

Portable Verilog and VHDL code

Generate portable Verilog® and VHDL® code from your series deep learning network.

Tune user-configurable parameters

Customize your deep learning network implementation by tuning user-configurable parameters such as Thread Number, Input, and Output Memory Size. For more information, see “Custom Processor Configuration Workflow”.

Custom board support

Integrate the code generated from your customized design into your reference design for deploying to your custom board. For more information, see “Generate Custom Processor IP”.

Performance estimation and profiling

Gather layer-level latency and throughput estimates for your series networks. For more information, see `estimate`.

Hardware Support

Prototype and deploy deep learning networks to Intel and Xilinx FPGA boards. Use Ethernet based LIBIIO to rapidly deploy your series deep learning networks to your target Intel and Xilinx FPGA and SoC boards. For more information, see “LIBIIO/Ethernet Connection Based Deployment”.

Support Package for Intel FPGA and SoCs

You can use the Deep Learning HDL Toolbox Support Package for Intel FPGA and SoC Devices to communicate with, deploy series networks, and retrieve inference results from target Intel FPGA and SoC platforms. To download the support package, use the Add-on Explorer. For more information, see “Deep Learning HDL Toolbox Support Package for Intel FPGA and SoC Devices”.

Support Package for Xilinx FPGA and SoCs

You can use the Deep Learning HDL Toolbox Support Package for Xilinx FPGA and SoC Devices to communicate with, deploy series networks, and retrieve inference results from target Xilinx FPGA and SoC platforms. To download the support package, use the Add-on Explorer. For more information, see “Deep Learning HDL Toolbox Support Package for Xilinx FPGA and SoC Devices”.