

Neural Processor Unit (NPU) IP

# ENLIGHT™

## ENLIGHT

Discover a deep learning accelerator that accelerates inferencing computation with excellent efficiency and unmatched compute density.

## ORBIT

Get to know the ORBIT Memory Subsystem IP that consists of an interconnect, memory controller, and PHY IPs that work in unison to create maximum system synergies.

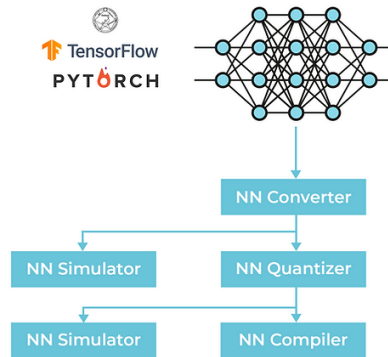
## ENLIGHT™

Performs various operations of deep neural networks such as convolution, pooling, and non-linear activation functions for the edge computing environments.

HW Advantages

SW Advantages

Deliverables



It has a solid competitive edge in delivering unparalleled compute density with energy efficiency (power, performance, and area)

## Hardware Key Advantages

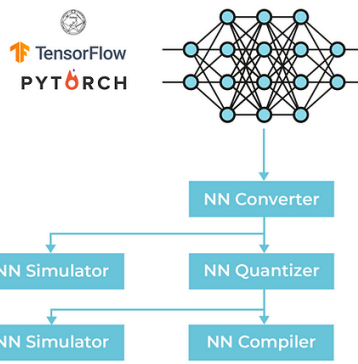
Mixed Precision (4-/8-bit) Computation

- Higher efficiency in PPAs (power, performance, and area), DRAM bandwidth

DNN-optimized Vector Engine

- Better adaptation to future DNN changes

Scale-out with Multi-core



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- Even higher performance by parallel processing of DNN layers

Modern DNN Algorithm Support

- Depth-wise convolution, feature pyramid network (FPN), swish/mish activation, etc.

## ■ Software Key Advantages

High-level Inter-layer Optimization

- Grouped layer partitioning and scheduling for reducing DRAM traffic from intermediate data

DNN-layers Parallelization

- Efficiently utilize multi-core resources for higher performance
- Optimize data movements among cores

Aggressive Quantization

- Maximize use of 4-bit computation capability

## ■ Deliverables

ENLIGHT Toolkit is available to all eligible companies with the following items:

- RTL design for synthesis
- User guide
- Integration guide