

Artificial intelligence (AI) in the cloud is maturing. Embedded deep learning (DL) is still emerging. This product sheet is about applying AI on premises, rather than in remote data centers. Smart factories crave for self-learning engines that make fast in-line decisions, close to the sensors. Such on-prem AI-engines need to be low-latency, energy-efficient, small and cost effective. First use cases include quality control and robotics. Labeling data and training artificial neural networks is rapidly becoming the solution of choice for the industry. A team of engineers handcrafting an algorithm is becoming too slow, too expensive and not scalable. Enter easics' embedded AI solution.

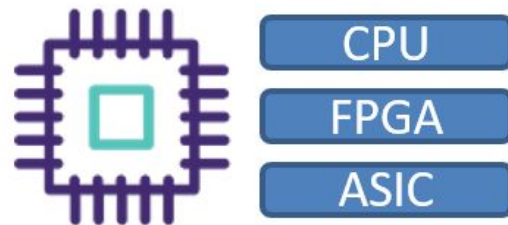
Deep Learning on FPGA (ASIC)

DL based on convolutional neural networks (CNNs) outperforms classical machine vision algorithms. CNNs have been shown extremely effective at sophisticated object recognition problems. FPGA technology boosts the performance of these networks and makes it possible to embed them in the application of your choice. Easics has developed a DL framework to generate an IP core of your neural network and to map it on FPGA, CPU or ASIC hardware.



Hardware Knowledge for Your AI Application

Your DL journey starts with collecting data / images of the use case that you would like to solve with AI. Easics has the right ecosystem and partners to help you with labeling these data and training the neural network. Once trained, easics will provide a fast and flexible service to map the neural network on the hardware platform of your choice - FPGA, CPU and even ASIC. The IP core running on the hardware platform serves as an inference engine for real-time object detection, classification and tracking in your application.



Integration Service for Your Application

Easics' inference engine fits in any FPGA by scaling it to your unique requirements and swiftly optimizing:

Latency	Power	Cost	Size
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TCP/IP over ethernet is the standard interface. Easics will integrate any standard or custom interface of your choice in the FPGA. The engine tightly interfaces with your chosen sensor(s) - e.g., visual spectrum, thermal infrared, Time-of-Flight, LIDAR.

You choose the type of neural net (e.g., Yolo, Mask-R CNN, ResNet, or custom) and input image size. Based on your choice and your application, easics analyzes the feasibility of the solution and determines the optimal hardware platform. Easics' DL framework helps you to the optimized hardware implementation of deep neural nets (inference) in your AI application.

