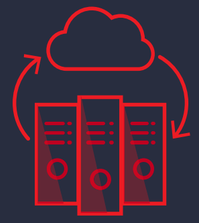
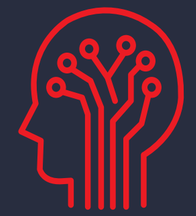
Introducing the Vitis Unified Software Platform

WELCOME
All Developers

Heterogeneous Compute

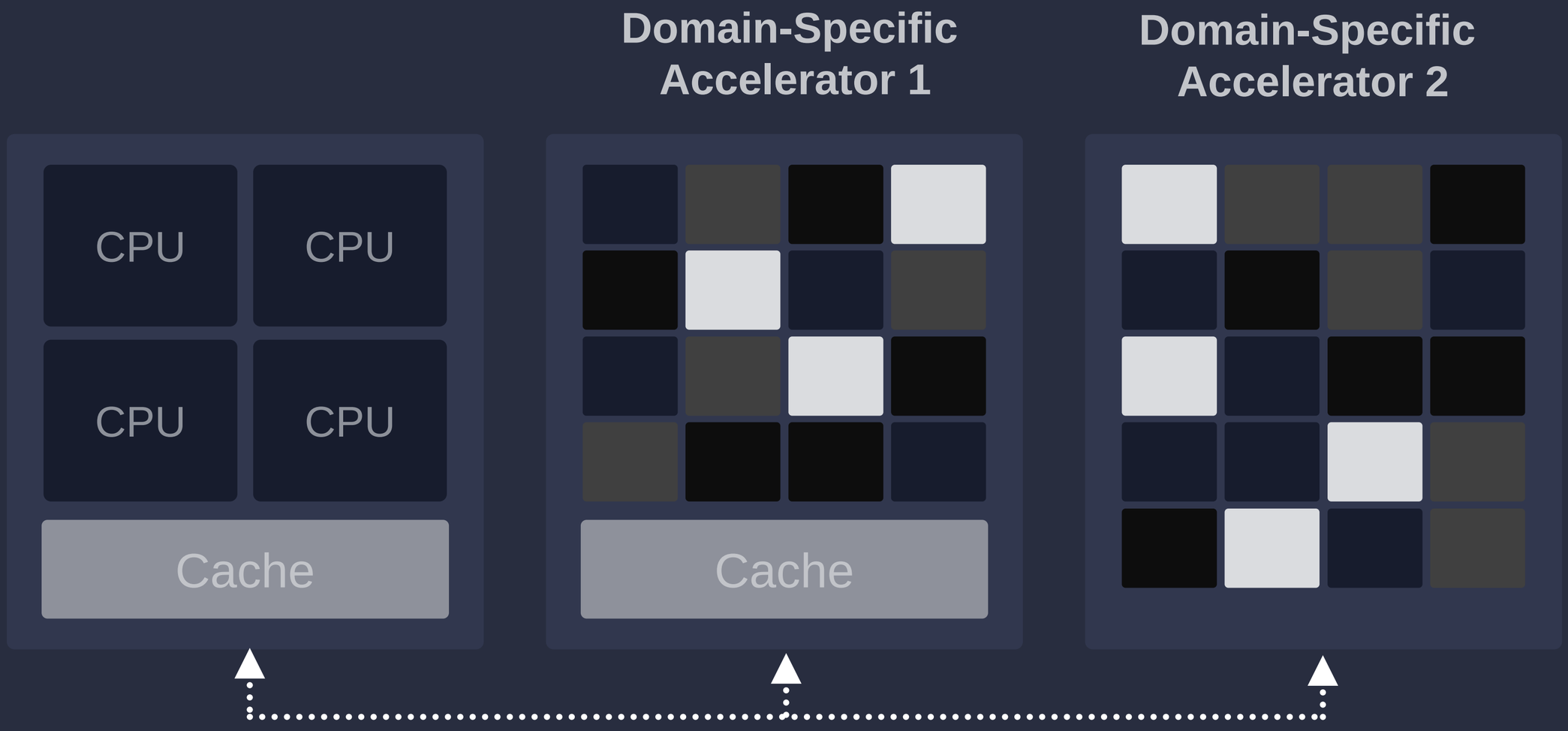


Cloud to Edge



AI Proliferation

Industry Trend: Heterogeneous Compute



Key Challenge: Programming & integration of Adaptive Acceleration Engines

Industry Trend: Cloud to Edge

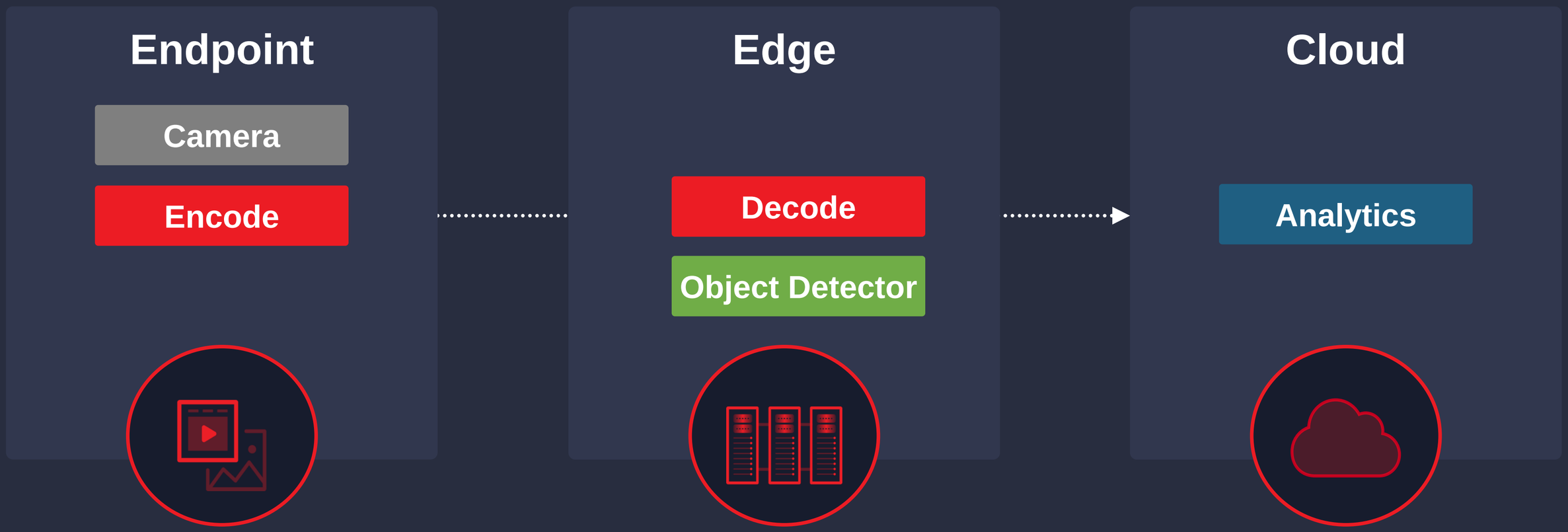
Camera → Encode → Decode → Object Detector → Analytics

Endpoint

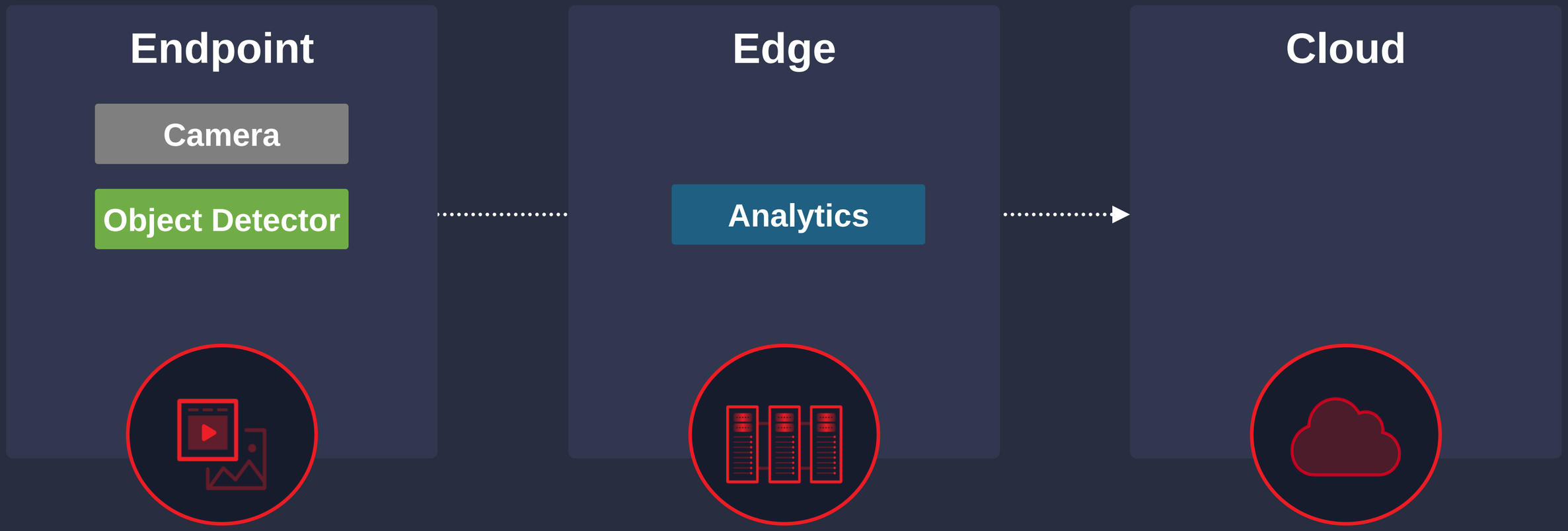
Cloud

Industry Trend: Cloud to Edge

Industry Trend: Cloud to Edge

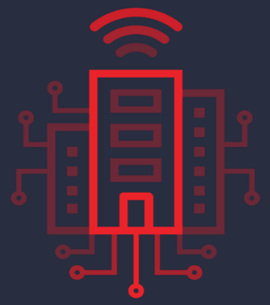


Industry Trend: Cloud to Edge



Key Challenge: Need for Retargetability

Industry Trend: AI Proliferation



Smart City

Smart Retail

Autonomous Driving

Security

Genomics

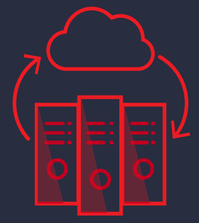
Video Analytics

Healthcare

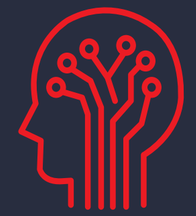
Finance

Key Challenge: Acceleration and Integration of the Whole Application

Heterogeneous Compute



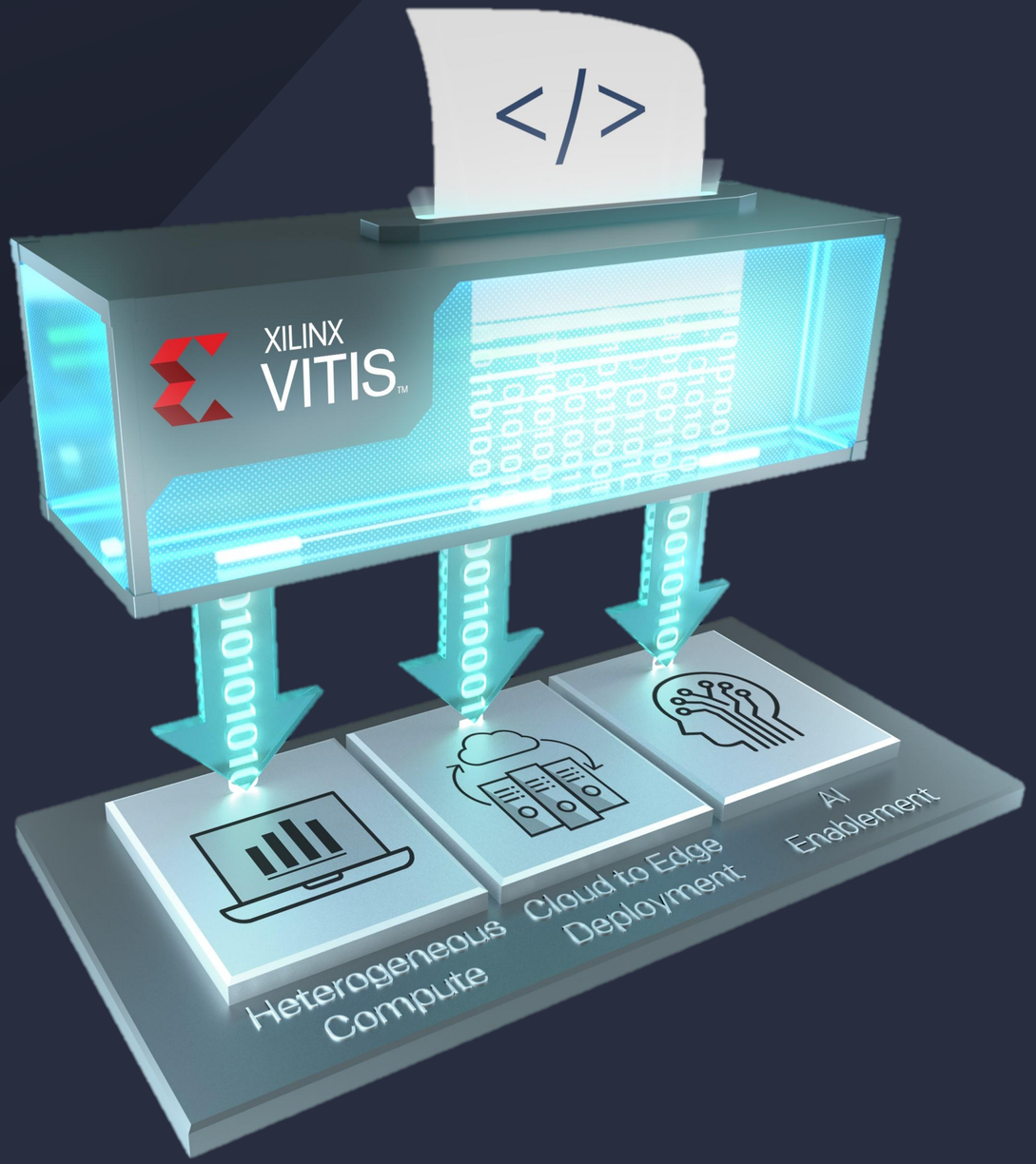
Cloud to Edge



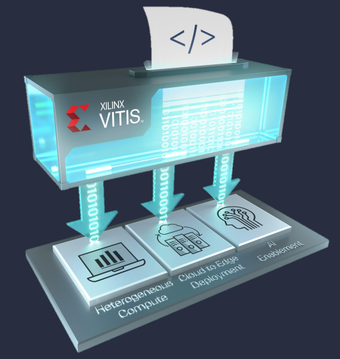
AI Proliferation

Heterogeneous Compute
Cloud to Edge
AI Proliferation

Vitis Unified Software Platform



Platform Transformation



Vitis Unified Software Platform

AI inference Acceleration

SDAccel, Data Center (FaaS, Alveo)

SDSoC, Embedded

OS and Firmware SDK

Vivado

Vivado

#DEVELOPERS

2012

2019

Enables all Developers to Build and Deploy to All Platforms

Build

Embedded Developers

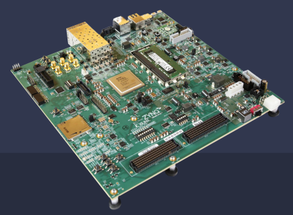
Enterprise Application Developers

Enterprise Infrastructure Developers

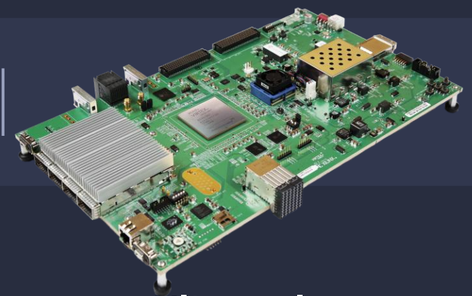
Data & AI Scientists

XILINX VITIS™

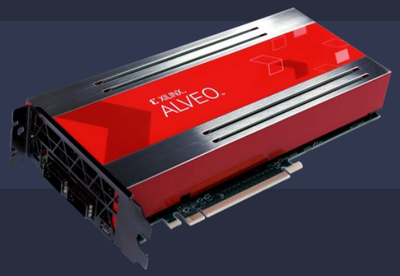
Deploy



Zynq



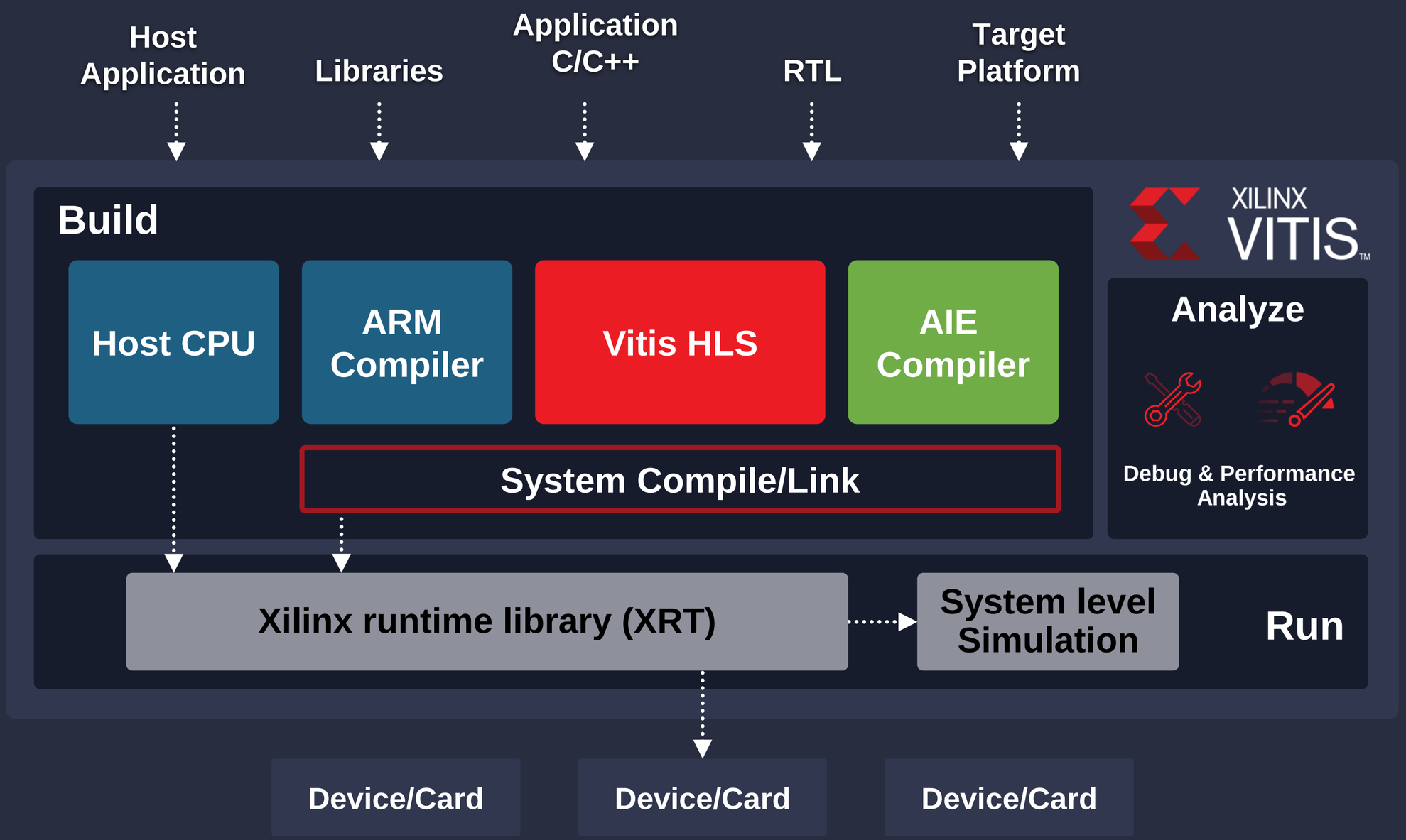
Ultrascale



Alveo

Data Center Rack

Build: Comprehensive Development Tool Suite



Build: Extensive, Open Source Libraries

GitHub

Domain-Specific Libraries

Vision & Image

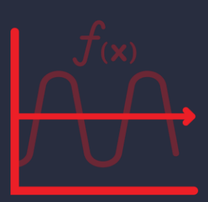
Finance

Data Analytics & Database

Data Compression

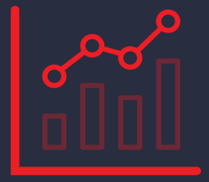
Data Security

Common Libraries

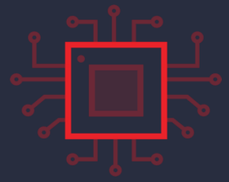


Math

Linear Algebra



Statistics



DSP

Data Management

400+ functions across multiple libraries for performance-optimized out-of-the-box acceleration

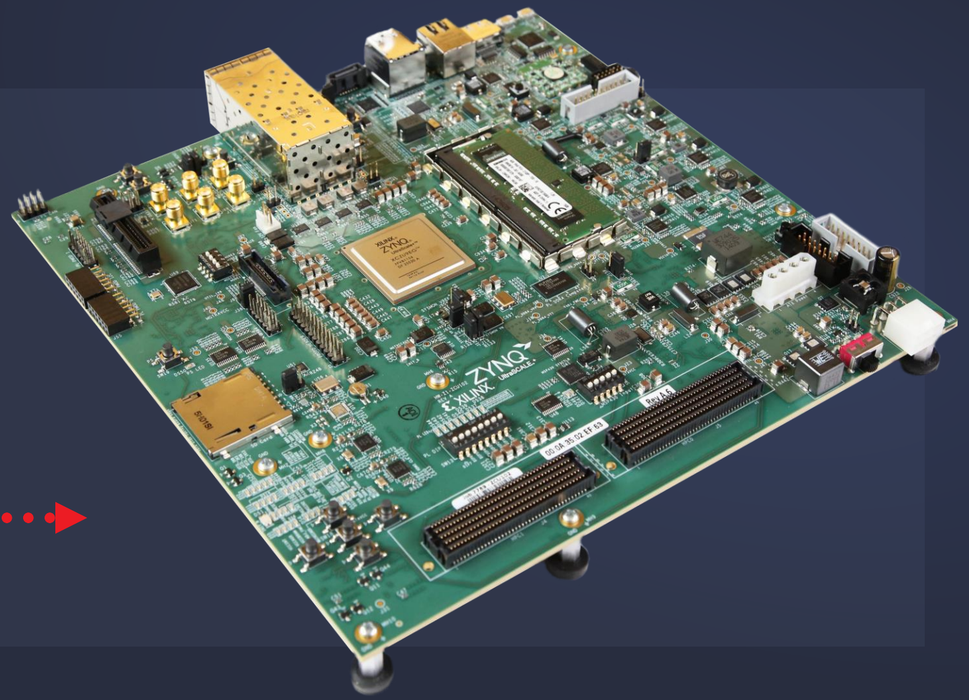
Deploy: Embedded Deployment

Application

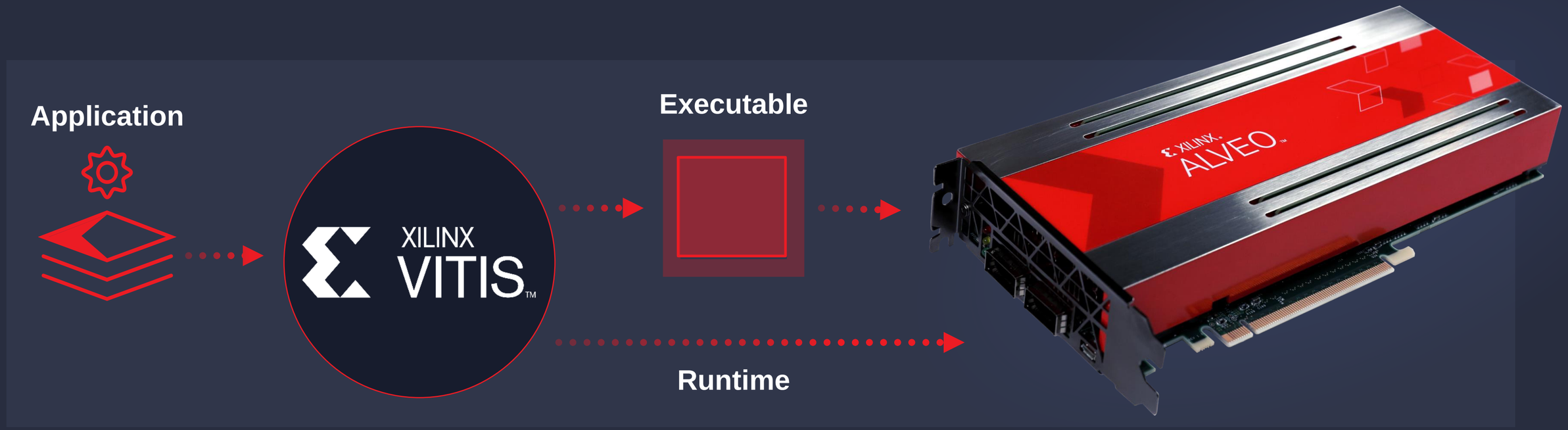
XILINX VITIS™

Executable

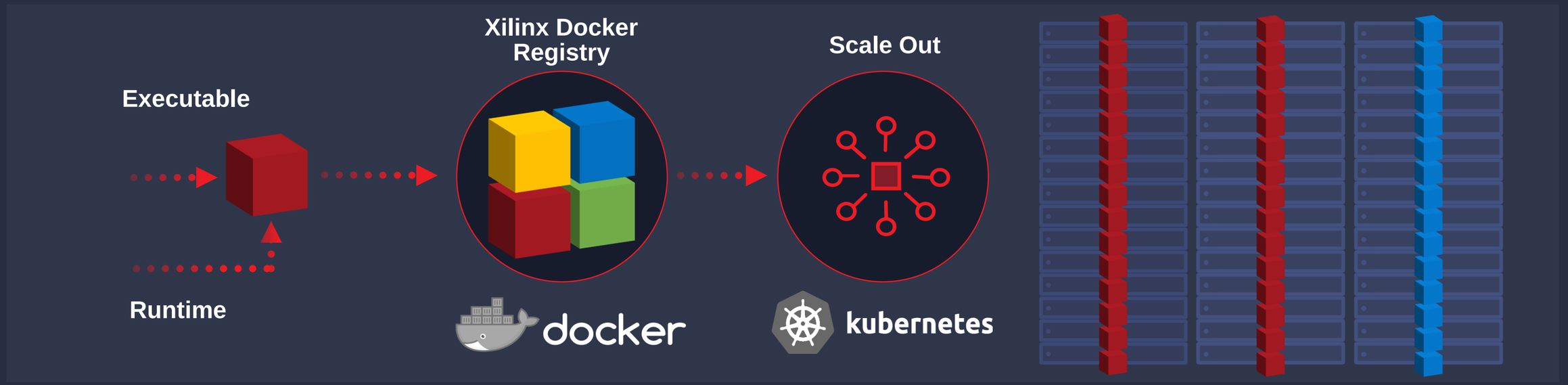
Runtime



Deploy: Single Server Deployment



Deploy: Scale Out Deployment

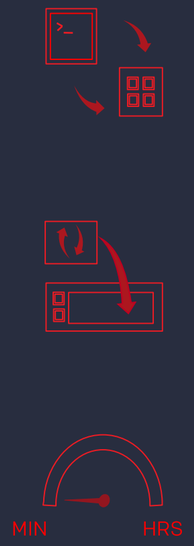


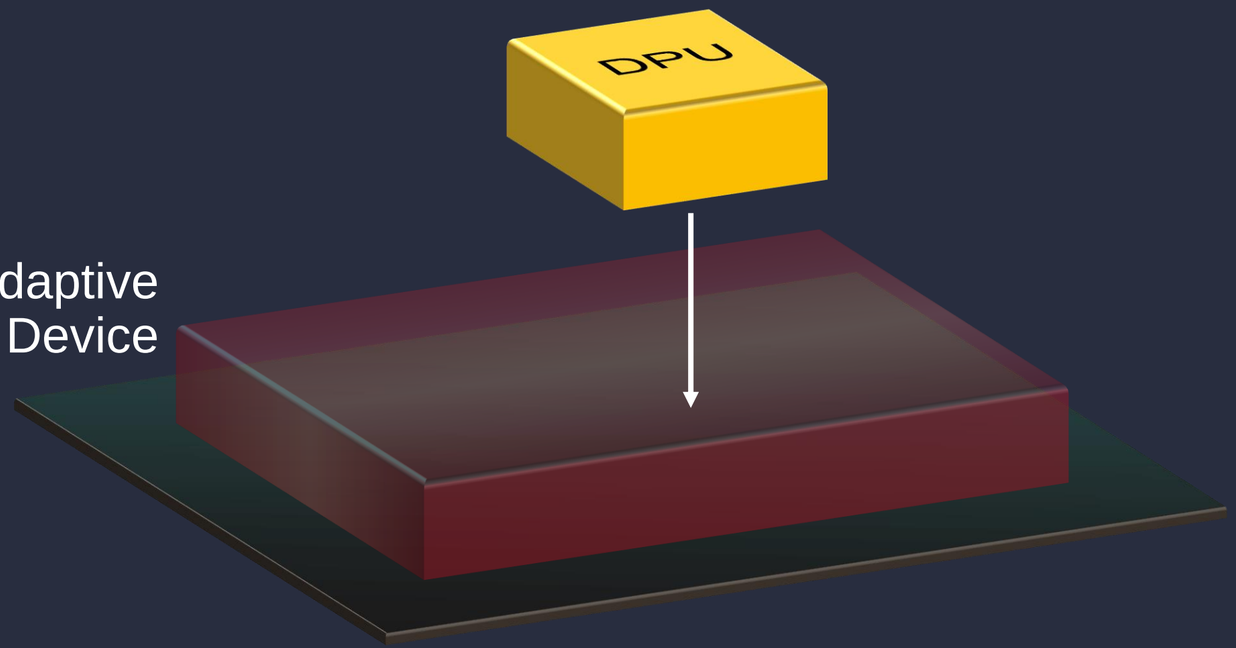
Vitis AI: From TensorFlow to Implementation in Minutes

DNN Processing Unit (DPU)

Direct Framework Compilation

Minutes of Compile Times





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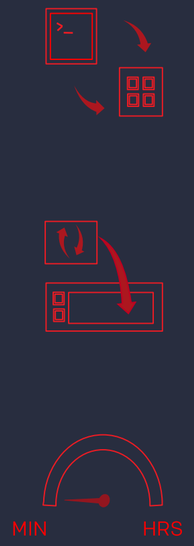
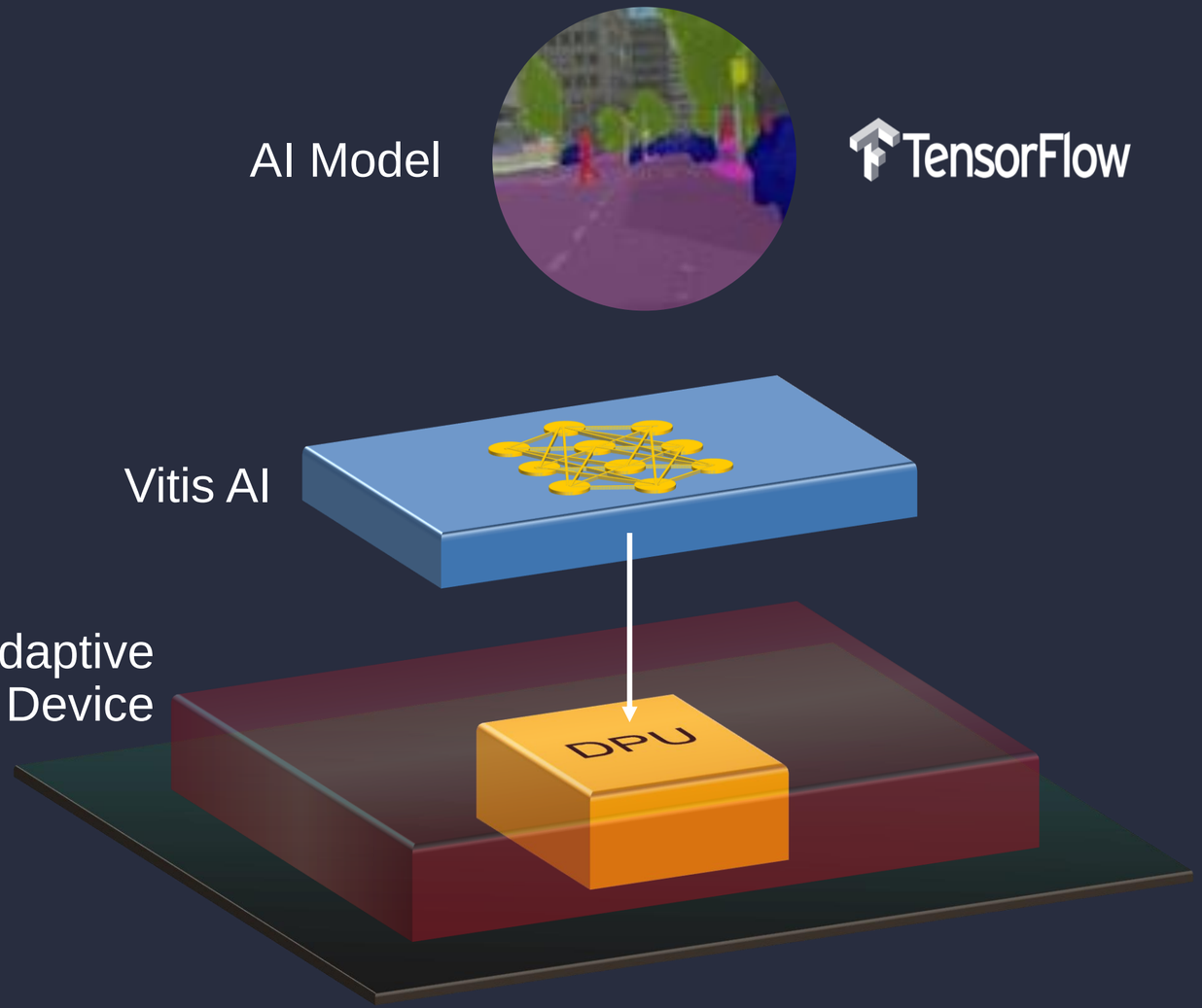


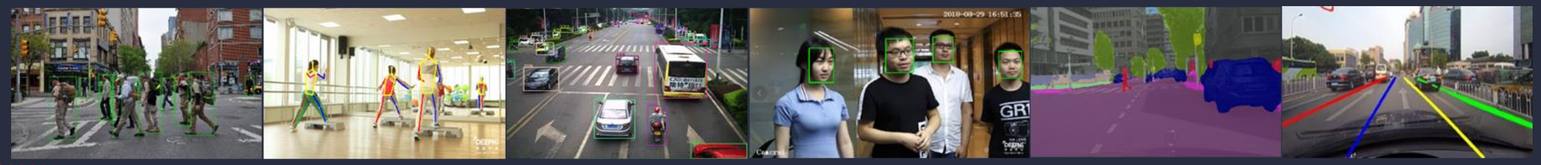


Enabling AI

Frameworks

TensorFlow Caffe PyTorch

Vitis AI Models



30+ pretrained, optimized reference models

Vitis AI Development Kit

AI Optimizer | AI Quantizer | AI Compiler | AI Profiler

Vitis drivers & runtime (XRT)

Performance improvement up to 10-20x

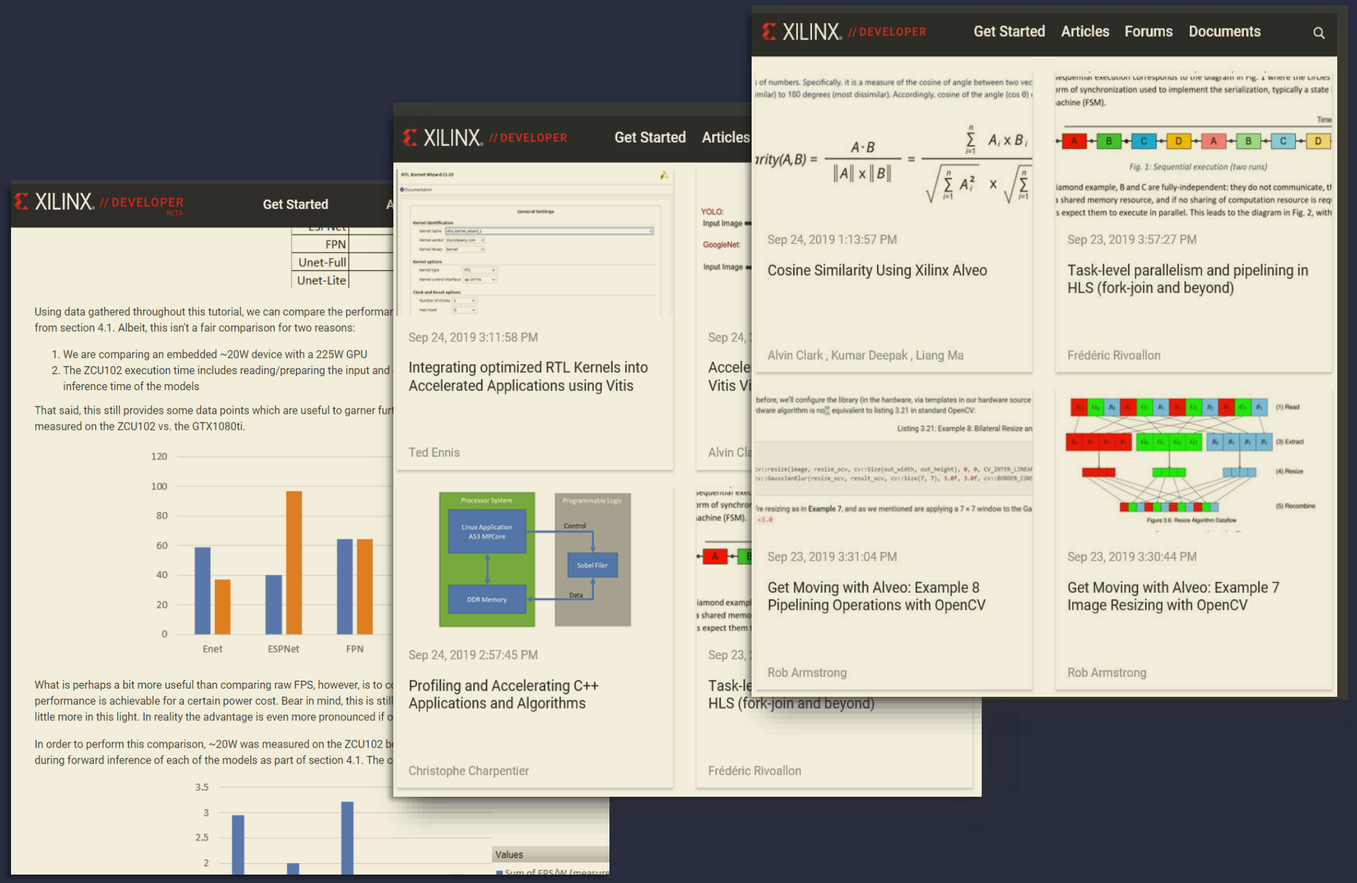
DSA

CNN DPU | LSTM DPU | MLP DPU

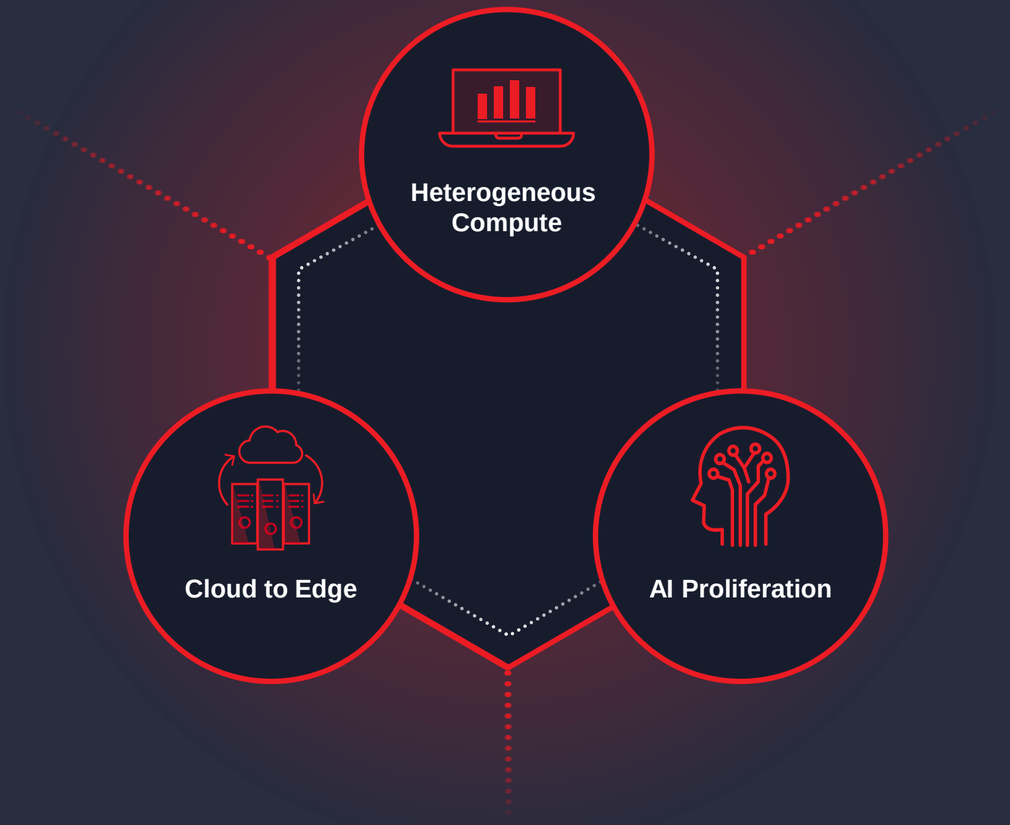
Tensor based ISA for true software programmability

developer.xilinx.com

- Beta Site Now Available
- Tutorials, Articles & Projects
- Accessible from a Single Location
- Learn Directly from Vitis Experts



30+ expert articles & projects (and growing)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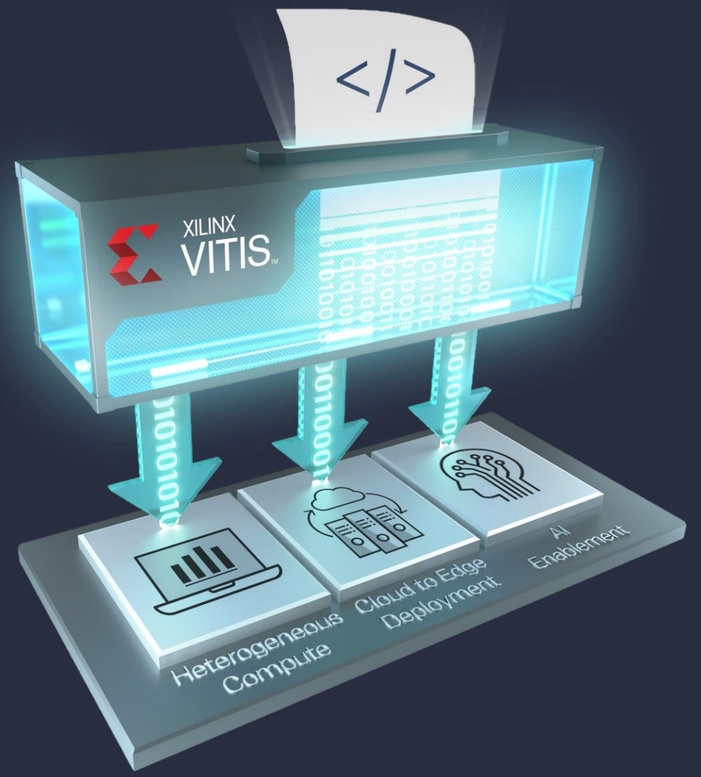

XILINX
VITIS
Heterogeneous Compute
Cloud to Edge Deployment
AI Enablement

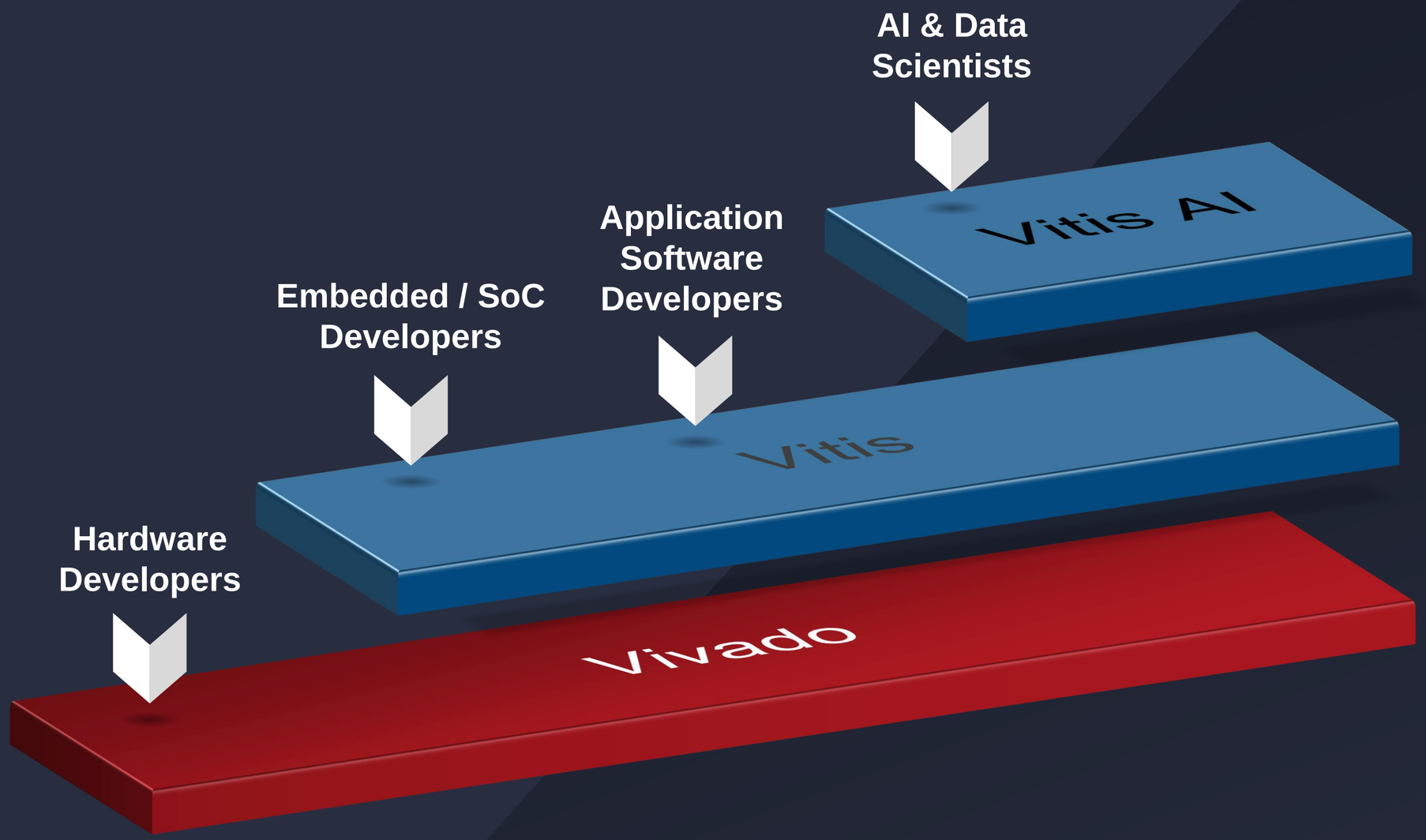
Eric Sindelar

GM of Operations and Advanced Technology Development | Supermicro

Francisco Webber

CEO | Cortical.io

Manoj Nayee

CEO | Boston Limited

Development Platforms for ALL Developers