

# Enabling Technologies: Artificial Intelligence Edge Processor Architectures

AN IDC CONTINUOUS INTELLIGENCE SERVICE

The *Enabling Technologies: Artificial Intelligence Edge Processor Architectures* service provides the analysis, insights, and context that technology providers, system OEMs, and end customers need to understand edge and endpoint artificial intelligence (AI) processing technology, use cases, vendors, and future road maps. Topics explored include AI use cases in the industrial market such as autonomous systems, robotics, advanced manufacturing solutions, video surveillance, and drones. In the consumer market, AI use cases discussed include gaming, virtual digital assistants, augmented and virtual reality (AR/VR), and smart home. AI will also be explored in the automotive and transportation market as advanced driver assistance systems (ADAS), infotainment, and autonomous driving features increasingly utilize AI. The *Enabling Technologies: Artificial Intelligence Edge Processor Architectures* service will help to map the competitive landscape of major suppliers to understand the varying technological choices in the market and new and innovative use cases for edge infrastructure and endpoint AI.

## Markets and Subjects Analyzed

- AI processing semiconductors: MPUs, MCUs, application processors, DSPs, SoCs, AI accelerators (NPUs and TPUs), GPUs, and FPGAs
- Examining the processor trade-offs between processing efficiency, flexibility, and power consumption for AI and autonomous systems
- Examination of technology trends and use cases for AI at the edge and endpoint in markets such as consumer, industrial, automotive, and transportation
- Examination of technology trends and use cases for AI in edge infrastructure

## Core Research

- Worldwide Edge and Endpoint AI Processing Market Forecast
- Consumer AI Endpoint Processor Market Share
- Edge and Endpoint AI Processing Technology Assessments
- AI Processing in the Vehicle
- AI Inferencing at the Edge — Start-Ups and Vendors to Watch
- AI Technology Assessment — Surveillance, Security, and Video Processing
- Industrial Applications for Edge and Endpoint AI Processing Technology
- AI Edge Infrastructure: The Heavy and Light Edge, Servers, MECs, and Gateways

In addition to the insight provided in this service, IDC may conduct research on specific topics or emerging market segments via research offerings that require additional IDC funding and client investment. To learn more about the analysts and published research, please visit: [Enabling Technologies: Artificial Intelligence Edge Processor Architectures](#).

## Key Questions Answered

1. How has the competitive landscape for processors changed with the demand for AI processing, and what are the key architectures?
2. Which companies are driving AI processing at the edge?
3. What are the key market and technology trends in edge AI?
4. What are the challenges in implementing AI for the edge?
5. How big is the AI edge infrastructure market, and what are the systems in heavy and light edge infrastructure?
6. What innovations are start-ups pursuing for edge AI?

## Companies Analyzed

This service reviews the strategies, market positioning, and future direction of several providers in the *Enabling Technologies: Artificial Intelligence Edge Processor Architectures* market, including:

Ambarella, AMD, AMS, Analog Inference, Aptiv, ARM, Arrow, Avnet, Blaize, BMW, Bosch, Broadcom, CEVA, Continental, Cypress, DENSO, Esperanto Technologies, Flex Logix, Gyrfalcon Technology, Hailo, Hewlett Packard Enterprise, Imagination Technologies, Intel, Lattice Semiconductor, MediaTek, Microchip, Mercedes-Benz, Mythic Inc., NVIDIA, NXP, Qualcomm, Samsung, SiFive, Sony, STMicroelectronics, and Tesla.