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Sommario/riassunto	In the age of neural networks and the Internet of Things (IoT), the search for new neural network architectures capable of operating on devices with limited computing power and small memory size is becoming an urgent agenda. This reprint focuses on recent developments in the organization of artificial intelligence (AI) on edge devices for various IoT-enabled smart applications and starts with the illustration of achievements in smart healthcare services. Digitalization of healthcare driven by the IoT and AI leads to the effective use of sensors, enabling various parameters of the human body to be instantly tracked and processed in daily life. The concept of machine learning sensors is applied to the diagnosis of COVID-19 as an IoT application in healthcare and ambient assisted living. Wearable sensors and IoT-enabled technologies also look promising for monitoring motor activity and gait in Parkinson's disease patients. IoT devices with AI can be effectively used in speech recognition and environmental monitoring, for detecting distracting actions in driver activities and for lifesaving applications such as child drowning prevention systems. Smart disaster rescue is an interesting development of a wearable device for search dogs that recognizes the behavior of a dog when a victim is found, using deep learning models. This reprint illustrates advanced cases of using AI technology for IoT-enabled smart applications.