	Edge AI	Industrial PC	PLC	Microcontroller	Motor Controller
Definition	Edge artificial intelligence (edge AI) is a model for developing AI workflows that span centralized data centres (the cloud) and devices located closer to humans and physical objects (the edge).	Robust computer designed to be used in an industrial environment, often involved in the manufacturing of goods.	A computer that has been specifically engineered to work reliably in tough industrial environments such as high or low temperatures, damp or dry circumstances, or dusty situations.	A Central Processing Unit (CPU) with program-loading capabilities. Also has Random-Access Memory (RAM) to store variables as well as input and output devices to facilitate communication.	devices which regulate the operation of an electric motor. In artificial lift applications, motor controllers generally refer to those devices used in conjunction with switchboards or VFDs to control the operation of the prime mover.
Advantages/Benefits	• Latency • Real time analysis • Scalability • Information Security and Privacy • Automated Decision-making • Reduced Cost	• Fanless and ventless design. • Ability to withstand harsh environments. • Highly configurable. • Extensive I/O options. • Long lifecycle.	• Advanced technology. • Less wiring. • Compactness. • Increased reliability. • More flexibility. • Lower cost. • Communication capability. • Faster response time.	• low time required for performing the operation. • easy to use, troubleshooting and system maintenance is simple. • The processor chip is very small, and flexibility occurs.	• Electrical protection of the motor and subsequently the mechanics. • Maintains constant speed, even when loads are changing. • Energy saving. • Accurate speed control.
Disadvantages/Limitations	• Need more hardware and software for optimum output and local storage requirements. • costs may rapidly escalate as they're spread over many local geographies.	• It is much expensive compared to the normal computers. • In case of damage, it costs more for the repair to be done.	• It has fixed circuit operation. • PLCs manufacturers offer only closed-loop architecture. • There is a limitation of working of PLCs under high temperature, vibrations conditions.	• It is generally utilized in micro equipment. • It has a complex structure. • Number of executions is limited.	• Not efficient.
Example	• NVIDIA Jetson Nano • Raspberry Pi 4	• Simatic Microbox PC • Beckoff C5002 Industrial PC	• Mitsubishi Electric Melsec • Schneider Electric Modicon	• Intel 8031/8051 • Motorola MC68HC11	• Rohm BD6753KV