

Expansion of IoT and TinyML: Requirements, Accelerators, and Challenges

Internet-of-Things (IoT) in Smart Cities and Industry 4.0

Neural network accelerators

Aspects for long-term sustainability:

Energy and resource efficiency

Quality preservation

Application versatility

Platform compatibility

On-device training

Current state-of-the-art methods:

Extreme quantization

Fails to adequately meet fundamental aspects, particularly in **complex problems** and **mission-critical applications**

Fixed precision

Fails to adequately adapt to the ongoing technological shift towards **on-device training**