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Abstract:

The invention relates to a system and method for decision-making in IoT-enabled environments by deploying advanced processing capabilities and machine learning algorithms at the network periphery. This distributed architecture empowers edge devices to autonomously analyze incoming data streams, extract actionable insights, and make informed decisions in real-time, thereby overcoming the limitations of traditional cloud-centric approaches. With its ability to minimize latency, conserve bandwidth, and enhance scalability, the system facilitates dynamic decision-making across diverse IoT applications, including smart cities, industrial automation, healthcare, transportation, and agriculture. By seamlessly integrating edge computing capabilities into existing IoT ecosystems, the invention lays the groundwork for a new era of intelligent, autonomous, and resilient IoT solutions capable of meeting the evolving demands of today's interconnected world.

Complete Specification

Description:The present invention relates to the field of edge computing and Internet of Things (IoT) technologies. More specifically, the invention pertains to an intelligent edge computing system designed for dynamic decision-making in IoT-enabled environments. By leveraging advanced processing capabilities and machine learning algorithms at the edge of the network, the system enables real-time analysis of data streams, leading to enhanced efficiency, reduced latency, and improved scalability in IoT applications.

BACKGROUND OF THE INVENTION

The following description of related art is intended to provide background information pertaining to the field of the disclosure. This section may include certain aspects of the art that may be related to various features of the present disclosure. However, it should be appreciated that this section be used only to enhance the understanding of the reader with respect to the present disclosure, and not as admissions of prior art.

The Internet of Things (IoT) has emerged as a transformative technology paradigm, enabling the interconnection of diverse physical devices and systems through the internet. IoT applications span various domains, including smart cities, industrial automation, healthcare, transportation, and agriculture, among others. As the number of connected devices continues to proliferate, the need for efficient data processing and decision-making mechanisms becomes increasingly critical.

Edge computing has gained prominence as a complementary approach to traditional cloud computing, particularly in IoT scenarios. Unlike centralized cloud architectures, edge computing involves processing data closer to the source of generation, i.e., at the network periphery or "edge." This distributed computing paradigm offers several

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