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## Patent Search

Invention Title	LIGHT WEIGHT DEEP LEARNING BASED TRUST MANAGEMENT MODEL FOR CLOUD ASSISTED FOG SYSTEMS
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**Abstract:**

This work focuses on addressing the challenge of managing massive heterogeneous traffic in IoT networks, particularly in dense deployment scenarios under 5G integration. A novel AI-based framework is proposed for predicting traffic, aiming to enhance network efficiency and prevent congestion. The framework utilizes a lightweight deep learning model based on convolutional neural networks, suitable for implementation on distributed edge computing nodes like fog nodes with limited computing resources. By leveraging distributed edge computing, the model aims to improve network availability, reliability, energy efficiency, and reduce communication latency in dense IoT deployments. The framework's performance has been evaluated, and the results confirm the effectiveness of the proposed traffic prediction model.

**Complete Specification****Description: FIELD OF INVENTION**

A lightweight deep learning-based trust management model for cloud-assisted fog systems, enhancing security and reliability in distributed computing environments.

**BACKGROUND OF INVENTION**

The development of cloud-assisted fog systems has revolutionized distributed computing by bringing computational capabilities closer to the data source, reducing latency and improving overall system performance. However, as these systems become more prevalent, ensuring trustworthiness and security in data processing and communication becomes a paramount concern. Traditional trust management approaches often rely on complex algorithms and heavy computational processes, which can be challenging to implement in resource-constrained fog nodes. To address this challenge, a novel approach based on lightweight deep learning is proposed for trust management in cloud-assisted fog systems. This lightweight deep learning-based trust management model leverages the power of deep learning algorithms while optimizing for efficiency and resource usage. By using techniques such as model compression, quantization, and efficient network architectures, the model can run effectively on fog nodes with limited computational capabilities. The key components of this trust management model include:

- **Trust Assessment:** The model uses historical data, behavior analysis, and contextual information to assess the trustworthiness of entities within the fog system, including devices, applications, and services.
- **Anomaly Detection:** Deep learning algorithms are employed to detect anomalies and suspicious activities that may indicate security threats or trust violations within the fog network.
- **Adaptive Learning:** The model continuously learns and adapts to evolving trust dynamics, improving its accuracy and reliability over time.

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