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(57) Abstract :
The invention titled Efficient Distribution of Resources in Fog Computing represents a pioneering solution to address the intricate challenge of resource distribution in fog computing environments. Fog computing, with its emphasis on proximity, real-time processing, and edge computing capabilities, is instrumental in meeting the demands of Internet of Things (IoT) applications. However, to fully harness the potential of fog computing, efficient resource allocation is paramount. This invention introduces a comprehensive framework that optimizes resource distribution, catering to the dynamic nature of edge networks and the diverse requirements of IoT devices.At its core, this invention boasts a dynamic resource allocation algorithm designed explicitly for fog computing. This algorithm adapts to changing workloads, device capabilities, and network conditions in real-time, ensuring optimal resource utilization and minimizing latency. Real-time monitoring mechanisms continuously assess resource usage and device status, enabling adaptive allocation that responds swiftly to fluctuations in demand. Furthermore, energy efficiency and cost optimization are central tenets this invention. The framework prioritizes energy conservation for resource-constrained IoT devices, reducing their energy footprint during resource allocation. Simultaneously, it evaluates cost trade-offs, taking into account budget constraints and the economic implications of resource distribution strategies.

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