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(57) Abstract :

The proposed invention is an AI-powered malware protection system specifically designed for Internet of Things (IoT) devices. It leverages advanced machine learning algorithms to monitor and analyze device behavior in real-time, identifying and responding to both known and unknown malware threats. The system operates efficiently in resource-constrained environments through edge computing, ensuring low latency and reduced bandwidth usage. It features self-healing capabilities that automatically restore compromised devices to a secure state, minimizing downtime. The system is scalable, adaptable, and supports interoperability with diverse IoT devices, offering robust security across various deployments. Additionally, it emphasizes user accessibility, privacy, and regulatory compliance, making it suitable for a wide range of applications, from smart homes to industrial IoT networks. This invention addresses the growing need for comprehensive and adaptive security solutions in the rapidly expanding IoT ecosystem.

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