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(57) Abstract :
 Real-Time Anomaly Detection in Scalable Distributed Cloud Architectures Using Deep Learning and AI-Driven Techniques ABSTRACT The invention discloses a system 100 for real-time anomaly detection in scalable distributed cloud architectures using deep learning and AI-driven techniques. The system 100 includes a data collection module 110, which continuously gathers data from various sources within the distributed cloud environment. A data preprocessing unit 112, connected to the data collection module 110, cleans, normalizes, and transforms the data into a format suitable for analysis. The deep learning-based anomaly detection engine 114 processes the preprocessed data using one or more neural network models to identify anomalies in real-time. An AI-driven analytics platform 116 analyzes the detected anomalies, providing insights, alerts, and recommendations for further action. The scalable architecture 116 of the system 100 supports dynamic scaling to handle the varying demands of the cloud environment, ensuring real-time performance and accuracy. This system enhances monitoring and response capabilities, improving security and efficiency in distributed cloud systems. FIG. 1

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