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(57) Abstract :
The present disclosure provides an agent-based intrusion detection system (100) for network security. The system (100) includes agents (102) strategically deployed within a network infrastructure, with each agent being assigned the task of monitoring and analyzing a specific subset of network traffic data. A processor (104) operatively coupled to the network infrastructure to facilitate parallel processing of the mentioned network traffic data subsets across the agents. The processor is further instructed to employ machine learning techniques to extract discernible patterns in network behavior, subsequently detecting potential intrusions or abnormal patterns. Upon detecting such patterns, the system (100) triggers the transmission of notifications to a designated computing device (110). This agent-based IDS system (100) offers enhanced coverage through agent distribution across network segments and is adaptable to various security tasks, including anomaly detection, signature-based detection, and behavior analysis.

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