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(57) Abstract :
The invention discloses an AI-based framework for detecting cybersecurity breach attempts through an integrated architecture comprising a Data Collection Unit (101), Preprocessing Module (102), Anomaly Detection Engine (103), Machine Learning Model Unit (104), Threat Intelligence Module (105), Response & Mitigation Unit (106), and User Interface Dashboard (107). The system combines supervised, unsupervised, and reinforcement learning with hybrid anomaly detection and threat intelligence integration. It provides real-time alerts, risk scoring, and automated or advisory mitigation measures. Experimental validation demonstrates enhanced accuracy, adaptability, and scalability across enterprise, cloud, IoT, and industrial environments.

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