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(57) Abstract :
The present invention discloses an AI-based model (100) for detecting cybersecurity vulnerabilities in cloud environments. It comprises a Data Collection Module (101), Feature Extraction Module (102), AI Engine (103), Vulnerability Prediction Layer (104), Explainability Interface (105), and Mitigation Module (106). The system proactively predicts vulnerabilities, provides interpretable results, and integrates with orchestration tools for automated mitigation. Experimental validation demonstrated superior accuracy, reduced false positives, and enhanced resilience compared to traditional systems. The invention ensures proactive, adaptive, and explainable cybersecurity for modern cloud infrastructures.

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