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(57) Abstract :

The present invention discloses an AI-based framework for automated software patch generation comprising a vulnerability detection engine (101), a patch generation module (102), a validation unit (103), and a continuous learning engine (104). The system autonomously identifies vulnerabilities, generates corrective patches, validates them through regression testing and sandbox execution, and deploys them securely. The continuous learning engine (104) ensures adaptability, scalability, and improved accuracy over time, thereby reducing patch latency and enhancing cybersecurity resilience across diverse software ecosystems.

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