

## Automation Testing is a Must in AI World

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Received Date: February 03, 2026 Accepted Date: March 03, 2026 Published Date: March 06, 2026

Citation: Jani Maulik (2026) Automation Testing is a Must in AI World. J Inf Secur Technol 2: 1-3.

### AI and Testing

Artificial Intelligence (AI) is transforming the way we work, whether through tools like GitHub Copilot, ChatGPT, or other AI-powered development assistants. These tools help streamline our workflows, reduce manual effort, and accelerate application development. In software testing, AI enhances accuracy and increases the reliability of end-to-end (E2E) testing by allowing teams to focus on real end-user outcomes. Building AI-driven E2E regression automation enables testing processes to become more efficient, consistent, and scalable—ultimately helping us deliver high-quality, defect-free software products.

**Customers:** Users across mobile applications, web applications, and APIs

#### Pain Point

1. End-to-end (E2E) testing is not being performed due to a lack of skilled QA resources.
2. Applications developed by the engineering team

are not being fully tested across all expected scenarios.

3. AI-driven applications require more thorough testing, including comprehensive positive and negative scenarios.
4. Slow test execution, is causing delays in production releases. Repetitive defects are being detected in production due to incomplete regression coverage.
5. High maintenance effort is required for automation test cases. Test data generation and proper utilization remain inconsistent and inefficient.
6. Overall testing efforts are resulting in low or no return on investment (ROI).

#### Actions needed for software testing with AI

1. Smart and rapid test case creation Self-healing test scripts that automatically adapt to UI and API changes
2. Easy scaling and simplified maintenance of regression suites automated test data generation using intelli-

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gent scripting reduced code volume with no redundant or duplicate scripting significant improvement in overall test coverage Unified API and UI testing capabilities

3. Intelligent test execution with priority-based optimization Predictive defect analytics for early issue detection Write-once, execute-anywhere support (cross-browser and cross-platform)

4. Enhanced reporting with detailed insights for development and QA teams

5. Natural language-based test automation for faster authoring and collaboration.

## Results

1. Fast implementation with minimal setup (Page Object Model, Behavior-Driven, Test Data-Driven, Machine Learning-Driven, and AI-Driven frameworks).

2. No requirement for deep internal AI expertise—any team member with basic programming knowledge can contribute.

3. Significantly reduced test maintenance effort that improves automatically over time.

4. Easy integration with CI/CD pipelines to support high-quality, low-defect releases.

5. Suitable for Agile, DevOps, or any modern software development methodology.

## Conclusion

1. Major defects were identified early during upgrades through automated regression testing, well before reaching production.

2. Consecutive defect-free functional releases, demonstrating the effectiveness of our automation strategy.

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