

# Model Context Protocol (MCP): The Missing Piece in AI-Based Testing

AI alone cannot test software effectively — it needs context.

## MCP provides:

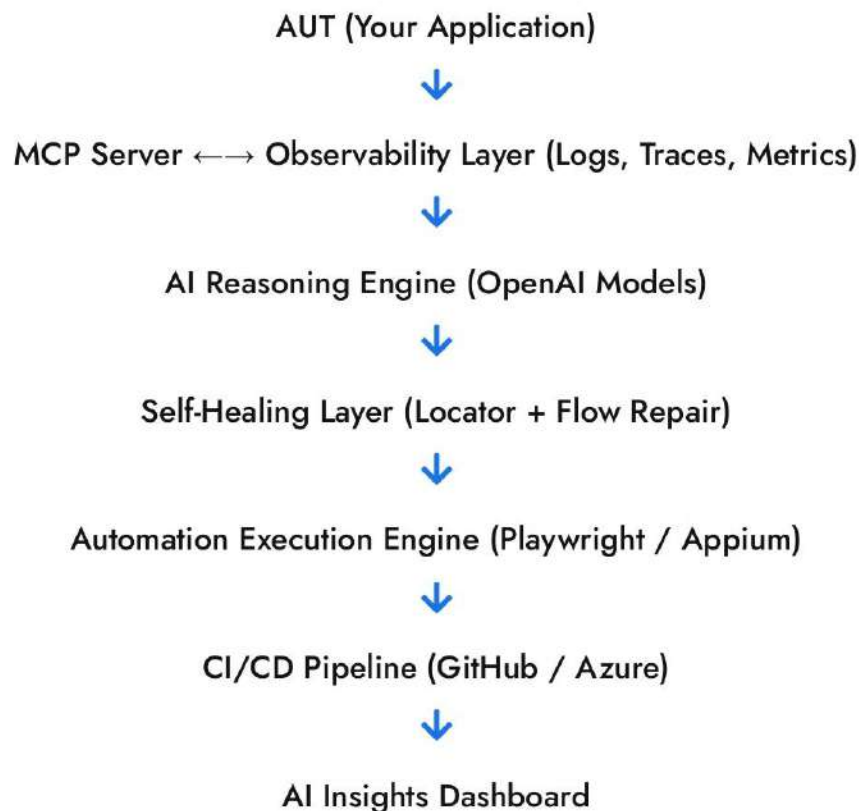
- ✓ DOM snapshots
- ✓ Network logs
- ✓ API requests/responses
- ✓ Errors, console logs, traces
- ✓ Screenshots & UI metadata
- ✓ Test run telemetry

## This context allows AI to:

- ✓ Understand the application
- ✓ Reason about failures
- ✓ Fix selectors
- ✓ Suggest missing tests
- ✓ Predict risks
- ✓ Generate actionable insights

This is what makes QAstra different — we give AI the intelligence to understand your product.

## How the QAstra AI Framework Works



# What the AI Framework Enables:

## AI-Generated Test Scenarios

AI analyzes flows, MCP telemetry, and usage patterns to propose missing tests and edge cases.

## Self-Healing Locators

The AI fixes broken selectors using:

- DOM diffs
- MCP-provided attributes
- Visual context
- Interaction traces
- No more brittle selectors.

## Intelligent Failure Classification

Failures get grouped by true root cause, not test outputs:

- Missing wait
- Backend issue
- Selector change
- Visual shift
- Network timeout
- UI regression
- This reduces triage time drastically.

## Predictive Risk Detection

AI identifies:

- unstable elements
- frequently failing flows
- high-risk areas before they break
- Powered by historical MCP telemetry.

## Visual & DOM AI Comparisons

AI understands the difference between:

- UI redesign
- CSS shifts
- Functional regressions
- Rendering issues

## AI-Assisted Debugging

For every failure, AI generates:

- the cause
- recommended fix
- probable owner (frontend/backend)
- suggested locator or retry mechanism

## Impact on Your QA & Development Workflow

- ✓ Reduce flaky tests by 60–80%
- ✓ Fix failures 4x faster
- ✓ Deliver 40% more automation with same team
- ✓ Identify risks before production
- ✓ Massive drop in manual triage work
- ✓ Ideal for fast-moving teams with weekly releases

This is the strongest value proposition you can offer.

## Where the AI Framework Delivers the Most Value:

- ✓ Dynamic UI (React/Angular/Vue)
- ✓ Mobile apps with frequent UI updates
- ✓ API-first platforms with evolving schemas
- ✓ Fast-moving SaaS releases
- ✓ E-commerce / finance / insurance flows
- ✓ Apps with complex user journeys

### AI Layer



- OpenAI Models
- MCP Server
- AI Reasoning Engine

### Automation Layer



- Playwright
- Appium

### Observability



- Grafana
- Allure

### CI/CD



- GitHub Actions
- Azure DevOps