

Test Automation with AI

Duration: 2 Days · **Training format:** Virtual Classroom / Online

Description

Test Automation with AI training focuses on AI-powered test automation practices. Participants will gain hands-on experience in prompt engineering, generating test assets with LLMs, coding with Cursor AI, developing test scenarios, and applying advanced integration techniques. They will learn how AI can bring strategic advantages to software testing processes

Outline

Module 1 - Prompt Engineering and Strategic Approach to LLMs

- **Introduction: What is AI and Why is it Important for Test Automation?**○ The role of AI in testing processes and the paradigm shift it brings.○ Introduction to the concept of “AI Orchestrator.”
- **Fundamentals of Prompt Engineering**○ Definition: What is prompt engineering and why is it critical?○ Six Principles of an Effective Prompt: Clarity, Context, Role Assignment, Structure, Tone, and Iteration.○ Practical Exercise: Comparing poor vs. effective prompts.
- **Introduction to Popular LLM Tools: ChatGPT and Gemini**○ Strengths of both models and their use cases in test automation.○ “Hallucination” risk and the importance of validating results.
- **Workshop: Generating Basic Test Assets**○ Producing functional test scenario ideas for a feature.○ Creating simple (valid/invalid) test data.○ Explaining an existing code block with AI.

Module 2 - AI-Assisted Coding with Cursor AI

- **Introduction to Cursor AI**○ What is Cursor AI? Differences and advantages compared to VS Code.○ Key features: AI Chat, Code Generation/Editing (Ctrl+K), and chatting with the codebase via @Codebase.
- **Developing Test Scripts from Scratch**○ Writing Selenium/Playwright code for a simple UI test (e.g., login scenario) using natural language.○ Creating classes and methods aligned with Page Object Model (POM) principles.
- **Understanding, Improving, and Debugging Existing Code**○ Refactoring: Making existing tests more readable and efficient through AI guidance.○ Documentation: Auto-generating comments (docstrings) for functions and classes.○ Debugging:

Analyzing error messages with AI to identify root causes and solutions.

- **Workshop: Automating a Sample Test Scenario**○ Automating key functions of a selected webpage (e.g., search functionality) from start to finish using Cursor AI.

Module 3 - Advanced Cursor AI Techniques and Integrated Workshop

- **Advanced Cursor AI Usage: Productivity-Oriented Techniques**○ Project-Wide Refactoring: Using @Codebase to smartly replace specific code (e.g., an outdated locator) across all files.○ Step-by-Step Code Generation for Complex Tasks: Breaking down a user story or requirement into multiple steps and guiding Cursor to generate code iteratively.○ Test Maintenance: Analyzing flaky tests and making them more robust with Cursor recommendations.
- **Integrated Workshop: End-to-End BDD Scenario Development**○ **Step 1:** Creating a BDD Scenario: Generating test cases in Gherkin format (.feature file) from a user story.○ **Step 2:** Writing Step Definitions: Generating automation code for each step of the .feature file using Cursor AI.○ **Step 3:** Completing Required Classes and Methods: Building Page Object classes and helper methods with Cursor.○ **Step 4:** Live Debugging: Using Cursor's debugging and chat features to resolve errors during test execution.
- **Future and Best Practices**○ Ethical considerations and data privacy in AI-driven test automation.○ Evaluating and critically reviewing AI-generated code quality.○ The importance of building a shared "Prompt Library" for the team.
- **Q&A and Closing**○ Summary and addressing participants' questions.○ Suggested resources for post-training personal development.

Prerequisites

Complete the Test Automation-Basic (International Test Automation) course.