PEAK LEARNING

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AI for Testers

Practical skills for testing AI-enabled systems—and using AI to improve testing

One-day course • Four modules • Short lessons, demonstrations, and hands-on exercises

Course Overview

AI is changing what we test, how we test, and even what it means for a result to be "correct." This concise, practical course helps testers understand AI-enabled systems, evaluate probabilistic behavior, identify important AI risks, and use AI effectively in their own testing work. The emphasis is on durable testing principles rather than any specific AI model or product.

Who Should Attend?

Software testers, QA professionals, test leads and managers, business analysts, product team members, and others involved in evaluating or assuring the quality of AI-enabled products.

Prerequisites

A foundational understanding of software testing is recommended. No data science, machine learning, or programming background is required.

Course Approach

The course is designed to be practical, concise, and largely evergreen. Current AI tools may be used for demonstrations, but the emphasis is on principles and techniques that remain useful as models and products change.

What You Will Learn

Understand AI-enabled systems

Recognize probabilistic behavior, AI failure sources, data issues, and why testers usually test a system containing AI—not just a model.

Evaluate AI behavior

Define acceptable results and assess factuality, groundedness, consistency, bias, fairness, safety, and other quality characteristics.

Test change over time

Use repeated testing, behavioral baselines, regression testing, drift detection, and monitoring to identify meaningful degradation.

Use AI as a testing tool

Apply AI to requirements analysis, risk identification, test design, test data, test assets, and other testing activities.

Course Modules

Module 1 — Understanding What You're Testing

- AI without the hype: AI, machine learning, generative AI, LLMs, and agents
- Deterministic vs. probabilistic behavior
- AI failure sources: data, models, prompts, retrieval, integrations, configuration, and human interaction
- Training, validation, and test data; overfitting, leakage, and drift
- Testing the complete AI-enabled system—not just the model

Module 2 — Testing AI Systems

- Moving from exact expected results to acceptable results, tolerances, scoring, and evaluation criteria
- Factuality, groundedness, unsupported claims, fabricated information, and confidently wrong answers
- Repeated testing, sampling, temperature/configuration effects, and unstable behavior
- Bias, fairness, safety, and harm
- Model changes, behavior drift, behavioral baselines, regression testing, and production monitoring
- Hands-on exercises evaluating AI responses and discovering instability

Module 3 — Using AI as a Testing Tool

- AI as a testing assistant—not an oracle
- Generating and improving test ideas
- Analyzing requirements for ambiguity, omissions, contradictions, and risk
- Improving test assets, test data, defect reports, and test results
- Testing AI-generated code and tests
- A practical pattern: Ask → Inspect → Challenge → Refine → Verify

Module 4 — Building a Responsible AI Testing Strategy

- Risk-based testing for AI
- Evaluating AI quality characteristics
- Creating a practical AI test strategy
- Governance, accountability, human oversight, and controls testers should understand
- The tester's role in an AI-enabled world
- Final practical exercise: create an AI testing approach for a realistic scenario

AI changes the nature of the test oracle. It doesn't change the tester's mission.