Job Description: Senior Test Engineer (AI-Assisted Synthetic Data & Scenario-Based Validation)

Location: Kolkata/ On-site
Seniority: Senior (hands-on; expected to build the capability, not just execute tests)
Team: QA / Validation Engineering / Data Quality
Role Type: Full-time

Role Summary

We are hiring a **Senior Test Engineer** to build an AI-assisted testing capability for our product before we have real customer data at scale. The core mission is to create **high-quality artificial test data** from **verbal "drive scenarios" (scenario narratives)** using **ChatGPT or similar LLMs**, automate the generation of realistic input datasets, run those datasets through **our system and reference baselines**, and build an **AI-assisted comparison framework** to validate results against expectations.

This role is central to reaching a reliable beta by enabling robust validation **even without customer production data**.

Key Responsibilities

Scenario-to-Data Pipeline (LLM-assisted)

- Convert verbal scenario narratives into structured, testable specifications (timeline, entities, events, constraints, edge conditions).

- Use **ChatGPT/LLMs** to generate synthetic datasets aligned to scenario intent, iterating prompts and constraints to improve correctness.

- Build repeatable workflows so synthetic data generation is **deterministic, versioned, and auditable**.

Synthetic Data Generation & Automation

- Develop scripts/tools to generate realistic input datasets and variations (parameter sweeps, boundary conditions, error injection, missing fields, corruption cases).

- Maintain a curated library of scenario packs for regression, performance, and compatibility testing.

- Ensure datasets are well-formed, schema-valid, and tagged with metadata for traceability.

Execution & Cross-Baseline Validation

- Execute generated datasets through the system under test and capture outputs in a structured way (APIs, logs, reports, derived metrics).

- Normalize outputs into comparable formats suitable for automated validation.

- Integrate scenario runs into CI/CD where applicable, producing repeatable test reports.

AI-Assisted Comparison & Result Analysis

- Build a comparison framework (rule-based + AI-assisted where useful) to:

    - Compare outputs vs expected results ("golden expectations")

- o Detect anomalies, inconsistencies, and regressions

- o Summarize and explain deltas in a developer-friendly way

- Produce high-quality defect reports: reproduction steps, scenario ID, input dataset hash, observed/expected deltas, and suspected module.

Quality Process & Collaboration

- Define test strategy for scenario coverage, boundary testing, regression cadence, and quality gates for beta readiness.

- Collaborate with backend/data engineers to improve testability, logging, and observability for faster RCA.

- Document prompt templates, data constraints, validation logic, and operational procedures.

Must Have

- 6–10+ years in **QA / test automation / validation engineering**, with ownership of test strategy and automation.

- Hands-on experience using **ChatGPT or similar LLMs** to generate structured outputs (data, test cases, scenarios), including prompt design with constraints to reduce errors.

- Strong scripting ability in **Python** (preferred) or equivalent language to build automation, parsers, validators, and comparison tooling.

- Proven experience building automated test pipelines: data setup → execute system under test → collect outputs → compare → report.

- Ability to define **expected outcomes** from specifications/scenarios and translate them into machine-verifiable checks.

- Strong grasp of data quality: determinism, reproducibility, versioning, traceability, and auditability.

- Comfort working with incomplete requirements and turning them into structured scenario/test assets.

Should Have

- Experience with event-log / time-series / transactional datasets and validating rule-based outcomes.

- Experience with **API testing** (REST) and validating backend computations via outputs/logs.

- Familiarity with **CI/CD integration** for automated regression execution and reporting.

- Experience maintaining "golden dataset" suites and managing expected-result evolution over time.

- Exposure to LLM quality controls: schema validation, self-check prompts, adversarial/edge-case prompting, and automated sanity checks.

Nice to Have

- Experience with property-based testing / fuzzing / mutation testing for data-driven systems.

- Familiarity with embeddings/similarity approaches to cluster diffs and summarize large result sets (optional).

- Experience building lightweight internal tools (CLI/web UI) for scenario management and execution.

- Experience comparing outputs across multiple internal components/services and normalizing them for consistent evaluation.

How to Apply

Please share your resume and (if available) one or more of the following:

• (a) a short example of an AI-assisted testing workflow you built (e.g., scenario → synthetic data → execution → validation), including prompt patterns or guardrails you used.

• (b) a link to a repo or sanitized snippets of automation scripts/harnesses (Python preferred) that generate test data and compare results against expectations.

• (c) a brief write-up describing a technical trade-off you made (e.g., realism vs coverage, determinism vs variability, speed vs depth of validation).