Viharika Bhimanapati

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AI-Driven QA Automation Leader | Big Data & Cloud Testing | Streaming & AdTech Platforms | GenAI QA Specialist

# Summary professional:

Senior QA Engineer with 11+ years across (Telecom & Media), specializing in Functional, Performance, Automation, Big Data, and Cloud testing. Expert in building Selenium/Cypress + BDD (Cucumber) frameworks and JMeter performance suites for large-scale streaming and ad-tech platforms. Strong Big Data/Cloud validation across AWS (S3, Lambda, EMR, Glue, Kinesis, Athena, CloudWatch) and Hadoop ecosystems (Hive, Spark, Oozie, HBase, Sqoop, Flume)—including event-driven ETL and data quality governance. SAFe Agile certified with deep experience in monitoring/observability (Splunk, AppDynamics, Dynatrace, Grafana). Currently exploring AI-driven QA innovation (e.g., GitHub/Microsoft Copilot) to accelerate test creation, enhance data checks, and improve defect detection at scale. for Addressable Ads / Leap Ads / Linear Ads and Pause Ads projects, contributing to Emmy Award recognition by validating ad accuracy.

# Experience summary:

* Established and optimized **QA strategy, test governance**, and release gates; led Quality Engineering teams and cross-functional collaboration in Agile/Scrum & Kanban; SAFe Practitioner.
* Experienced with QA and UAT efforts for enterprise-scale applications, bringing over 10 years of experience across functional, integration, and regression testing, with 9+ years in end-to-end test automation.
* Actively contributed to enterprise-grade **AI QA POCs using GenAI, RAG, and NLP-**based test generation and triage—driving test automation scalability and governance in cloud-native environments.
* **Contributor** to an AWS Bedrock–based test generator; I **designed retrieval prompts and pytest templates**, cutting regression effort and shrinking backlog.
* SME for migrating projects from **on-prem to Big Data Platforms** and **AWS Cloud** provided an exposure on having good hand on for Hadoop Administration and Big Data Technologies.
* Highly motivated Data Tester leveraging **AI tools** to boost productivity and drive revenue growth through data analysis.
* Adopted **AI-assisted coding tools** like **GitHub Copilot** to accelerate framework development and improve code quality, enhancing team productivity in automation projects.
* Lead the Test design, implementation, and maintenance of **AWS event-driven Data pipelines**, collaborating with cross-functional teams to ensure timely and accurate data processing, and seamless integration with upstream and downstream systems.
* Proven expertise in **Site Reliability Engineering (SRE)**, ensuring **platform stability and observability** across large-scale, cloud-native telecom and streaming systems through end-to-end validation and proactive incident resolution.
* Experience with automation tools like **Selenium, Cypress WebDriver IO/IDE Grid, Appium and QTP, Junit/TestNG** to develop automation test scripts for Web, Client, and Server applications.
* **Web automation** with **Selenium WebDriver** (Java/Python) and headless runs; robust waits, cross-browser/device coverage.
* **REST API** testing via Rest Assured, **Postman**, negative, auth, and schema validation.
* Experience with **Performance Engineering** by executing **Load/Stress/Endurance** testing with **JMeter** for Web, **APIs, ETL/Batch, and streaming workloads**; SLA metrics (latency, throughput, error rate).
* Experience in testing **Set-To-Boxes** for Broadband and Internet including functionalities like **DVR, VOD and PPV**.
* Hands on expertise with Traffic capture and troubleshooting with **Charles Fiddler, Wireshark** (headers, payloads, latency).
* Scripting and utilities: **Python/Java, shell scripts** for health checks and log parsing.
* Well-versed in version control systems like **GitHub, Bitbucket, and CI/CD tools, GitLab, and Jenkins** for streamlined automation integration.
* Experienced in leading teams, task allocation, and monitoring team productivity to ensure quality and timely delivery in both Waterfall and Agile environments.

## IT Technical Skills

* **Languages & Scripting:** Java, JavaScript, Python, SQL, PL/SQL
* **Testing Frameworks:** TestNG, JUnit, Cucumber, PyTest, Robot Framework
* **Test Automation Tools:** Selenium WebDriver, Appium, Cypress, Playwright, Rest Assured
* **AI/LLM & Data Quality (QA):** AWS Bedrock; GitHub/Microsoft Copilot; RAG patterns; OpenSearch (vector); LangChain; LangSmith, MCP,Great Expectations; Evidently, Azure, Data Factory, Data lake, MDM/RDM tools.
* **Test Management Tools:** JIRA, TestRail, Zephyr, qTest
* **Defect Management Tools:** JIRA, Bugzilla, HP ALM/QC
* **Integrated Development Environments (IDEs):** Eclipse, IntelliJ IDEA, Visual Studio Code
* **API & Web Services Testing:** REST Assured, Postman, SOAP UI, GraphQL, Swagger/OpenAPI
* **CI/CD & DevOps Tools:** Jenkins, GitHub Actions, GitLab CI/CD, Azure DevOps, Bamboo
* **Database Technologies:** MySQL, Oracle, PostgreSQL

# Project summary:

**Client: DIRECTV | Los Angeles, CA. March 2021 to Current**

**Role: Sr. SDET| SQA | Big Data | Cloud Test Engineer**

**AI QA** **Automation (POC) Team Contributions**

* Co-developed a GenAI-powered test generation framework leveraging AWS Bedrock, LangChain-style retrieval chains, OpenSearch, and Lambda, to auto-generate unit and integration test cases; increased test coverage and generation accuracy to ~75%, automating 300+ test cases.
* Designed and fine-tuned retrieval-augmented generation (RAG) prompts and pytest-based scaffolds, enabling context-aware test synthesis for microservices, APIs, and cloud-native data pipelines.
* Tested GenAI-driven chatbots and conversational agents by validating prompt-response flows, context retention, and multi-turn interactions; automated conversation test cases to ensure accuracy, intent recognition, and safe fallback handling.
* Integrated AI test generation into Bitbucket PR workflows and CI pipelines, with gated human-in-the-loop reviews—ensuring safe, high-quality adoption of GenAI-based tests.
* Contributed to a NLP-based test triage prototype using classification logic to route failing tests with suggested fixes—raising triage accuracy to ~70%, reducing MTTR and engineering overhead.
* Led LLM QA initiatives across ad-tech and cloud data platforms, using LangSmith observability, Promptfoo evals and Amazon Bedrock evaluations/guardrails to harden prompts, reduce regressions, and ship safer GenAI features at scale.
* Used In built in tools like LLM as a Judge to score another model’s outputs based on quality, usefulness, safety, faithfulness, instruction following.
* Stitched LLM test telemetry into CloudWatch/Grafana alongside API/ETL SLOs (latency, error rate) to correlate model quality shifts with infra changes; escalated on drift beyond thresholds.
* Built observability dashboards using CloudWatch and OpenSearch for real-time monitoring of GenAI test adoption, edit rates, hallucination thresholds, and feedback loops—supporting responsible AI governance.
* Authored team onboarding documentation, prompt libraries, and Gherkin-based use cases to guide non-technical QA teams in adopting and customizing GenAI test workflows.
* Partnered with Dev, DevOps, and QE leadership to operationalize AI test governance, contributing to org-wide AI-readiness strategy in testing.

**Environment & Tools:** Python, PyTest, AWS Bedrock, OpenSearch, S3, Lambda, API Gateway, CloudWatch, Bitbucket, Jenkins, Gherkin, Selenium (POM), Git, VS Code.

**Key Assignments/ Initiatives:**

* Owned QA strategy for cloud data & ad-tech platforms; served as SME for migrating on-prem big-data workloads to AWS with end-to-end test coverage across data, APIs, and UI for both functional and Performance testing.
* Assisted QA resources on offshore on test executions and certifying applications before pushing to production by meeting tiemlines.
* Built AI-powered automation frameworks (Python, Pandas, Pytest, Selenium, GitHub Copilot) reduce regression cycle time by 80%.
* Leveraged both Selenium and Python Libraries in Test framework for End-to-End workflow Big Data Pipeline Testing where Web based UI’s and Dashboards are part of Validation.
* Automated test execution workflows using Python, Selenium WebDriver, and Jenkins for scheduled and on- demand batch test runs.
* Validated applications on Azure cloud platforms, testing for scalability, compliance, and performance across distributed systems and ensuring seamless deployment of cloud-native workloads.
* Automated Splunk Web access with Selenium (headless Chrome) across SSO/MFA (Okta/Azure AD) flows; implemented secure secrets handling and session reuse to stabilize CI runs.
* Developed automation test scripts using Playwright with TypeScript for modern UI components and integrated into CI pipelines for real-time defect tracking.
* Integrated Selenium WebDriver scripts with GitHub CI/CD pipelines for automated test execution and reporting.
* Automated API schema validation against Swagger/OpenAPI contracts using Rest Assured, improving compliance and reducing API-level defects.
* Enhanced UI test automation for JavaScript-based single-page applications (SPAs), validating responsive behaviors, API integrations, and user workflows with modern frameworks.
* Built Page Object Model for login, dashboard, search, and export pages with resilient waits and role-based variations, reduced UI flakiness and maintenance overhead.
* scripted CSV/PDF downloads for one click exports from saved searches & dashboards via UI and Splunk REST API/splunklib fallback for reliability; auto-versioned files and check summed artifacts.
* Worked on functions in AWS Lambdas which aggregates the data for Ad processing and stores results in Dynamo DB.
* Expertise in working with EMR and running Spark Streaming jobs and have expertise on Spark SQL queries.
* Automated end-to-end validations for Glue/EMR/Lambda/Kinesis pipelines—seeded S3 fixtures, triggered runs via Step Functions, and verified downstream artifacts (S3 partitions, Flink, Elasticsearch indices) for completeness.
* Asserted MSCK REPAIR, Glue crawlers, and Hive-style partition registration; flagged missing day/hour partitions and late-arriving data via metric thresholds.
* Integrated automation suites into CI/CD pipelines to enable continuous testing, accelerate feedback, and catch defects early.
* Developed performance scripts for benchmarking the SLAs for Ad tech.
* Experience in using JMeter for Performance Testing like Load, Stress and Endurance tests.

**Environment & Tools:** Java, Spring Boot, Selenium, Maven, Git lab, Harness, JIRA, TestRail, Extent Reports, Postman, YAML, AWS, Azure, application. properties, IntelliJ IDEA, Confluence, CI/CD Pipelines, Role-based Routing (scp-ui, scp-admin), API Testing, JSON, XML, Agile/Scrum

**Client: AT&T Entertainment Group | Los Angeles, CA. November 2015-March 2021**

**Role: Sr. SDET | Big Data Tester**

**Key Assignments/ Initiatives:**

* Validated Dynamic Ad Insertion (DAI) for Live TV & VOD, 4K Live projects ensuring impression logging accuracy and advertiser compliance.
* Performed End-to-End testing for both functional and Performance requirements on Head End project and Hadoop Projects.
* Performed End-to-End functional and performance testing on Headend and OTT/STB video/audio workflows, validated builds across devices and Hadoop Projects on both Cloudera and Hortonworks distributions.
* Developed scalable automation test scripts using Selenium WebDriver, Java, TestNG, Cucumber, and Maven to enhance test efficiency and maintainability.
* Integrated Playwright into automation pipeline for real-time ad dashboards, enabling full-stack UI validation and reducing pre-prod defect leakage by 90%.
* Built and optimized a Page Object Model (POM)-based automation framework, ensuring modularity and reusability.
* Performed end-to-end API testing using Postman and automated RESTful service validation with Rest Assured for XML/JSON payloads.
* Executed backend database testing by writing and optimizing complex SQL queries to verify data integrity and consistency.
* Leveraged SQL Server technologies to validate data transformations, execute complex queries, and ensure end-to-end data accuracy during integration and performance testing.
* Developed and maintained automated test scripts for native iOS and Android mobile applications using Appium and Selenium WebDriver, improving regression test efficiency and reducing manual test cycles.
* Built and maintained iOS automation test suites using Appium with Python and Swift, validating app functionality, UI responsiveness, and device compatibility across multiple iPhone/iPad versions.
* Designed JMeter load/stress/soak suites simulating ~1M concurrent viewers for high-demand events (e.g., NFL Sunday Ticket).
* Enhancing JMeter scripts by implementing required parameters, checkpoints, co-relations, reusable functions, controllers etc.
* To enhance the JMeter performance, tuned JVM flags like heap and cache in properties files.
* Increase heap size and memory in JMeter JVM to avoid application hanging and for a better runtime.
* Simulating heavy load to test dynamic application w.r.t user-based data on servers, group of networks to understand the behavior under peer load.
* Created performance scripts for Hadoop and on-prem services, debugged network latency and isolated End-to-End bottlenecks.
* Captured and trended CPU/memory/disk/DB I/O using AppDynamics and Grafana; validated staging vs. production scaling and SLAs (latency, throughput, error rate).
* Wrote SQL scripts with multi-table joins and data transformations to validate data integrity for backend systems and data lakes during system integration testing.
* Led migration from Cloudera (CDH) to Hortonworks (HDP) in LAB and staging; performance-tested Oozie jobs, Sqoop jobs, Hive queries, HBase, Flume.
* Converted MapReduce programs to Spark (Scala/Python); optimized Hive with joins/aggregations to reduce query times.
* Created managed/external Hive tables and worked with structured/semi-structured/unstructured data sets.
* Built Spark Streaming pipelines ingesting from Kafka/S3 into HDFS/HBase; validated end results.
* Implemented Flume → HDP (via Kafka Manager) ingestion for test and prod-like data.
* Developed Pig/Hive ETL to populate the data lake; moved hashed/un-hashed XML data into Hadoop.
* Scheduled and orchestrated Oozie workflows (with queue management); triggered Hadoop workflows through config updates.
* Verified data loads with HiveQL; validated Pig UDFs; created Sqoop import/export jobs for BI reporting.
* Established data quality checks for completeness, conformity, consistency, accuracy, duplicates, and integrity.
* Extracted server/application logs; developed shell scripts to validate Hadoop daemons and alert on failures.
* Generated operational reports using Oozie workflows + Hive queries; created a dedicated test database and HQL analyses for transformed data in HDFS.
* Wrote stored procedures and trigger-based loaders for parameterized data inserts supporting downstream validations.
* Executed handoff, comprehensive, and regression test cycles; documented Test Plans and Test Strategy with clear in-scope scenarios.

**Environment & Tools:**

Selenium WebDriver, TestNG, JUnit, Cucumber, Maven, GitHub, Jenkins, JIRA (Xray), Python, SQL, Postman, Rest Assured, Appium, IntelliJ, Confluence, CI/CD Pipelines, Agile/Scrum, API Testing, XML, JSON,

**Client: Seminal Minds August 2012- Nov 2013**

**Role: Java Developer**

**Key Assignments/ Initiatives:**

* Developed front-end user interface modules by using HTML, XML, Java AWT, and Swing.
* Front-end validations of user requests carried out using Java Script.
* Designed and developed the interacting JSPs and Servlets for modules like User Authentication and Summary Display.
* Designed and developed Entity/Session EJB components for the primary modules.
* Java Mail was used to notify the user of the status and completion of the request.
* Developed Stored Procedures on Oracle 8i.
* Implemented Queries using SQL (database triggers and functions).
* JDBC was used to interface the web-tier components on the J2EE server with the relational database.
* Performed client-side validations using JavaScript and AJAX.
* Used ANT for compilation and building WAR files.
* Utilized the base UML methodologies and Use cases modeled by architects to develop the front-end interface. The class, sequence and state diagrams were developed using Rational Rose and Microsoft Visio.

**Environment & Tools**: Eclipse, Java, J2EE, Struts, Spring, Web services, Maven, Tomcat, Oracle

**Education:**

**Southern University and A&M College – USA in 2015**

Master of Science, Computer Sciences

**Jawaharlal Nehru Technological University, Hyderabad - India**.

Bachelor of Technology, Information Technology in 2012

**Certifications & Memberships:**

* Certified SAFe® 4 Practitioner, Scaled Agile Inc.
* Microsoft Certified: Azure AI Engineer Associate.
* AWS Certified: AI Practitioner.
* ISTQB (CTFL) Certified.