

Rahul Kumar

LinkedIN: <https://www.linkedin.com/in/rahul34/>

Github: <https://github.com/rhl9263/>

Email: rahul31raja@gmail.com

Mobile: +91-8709814557

PROFESSIONAL SUMMARY

- Results-driven **Senior SDET** with **4.6 years** of experience in designing, developing, and implementing comprehensive **test automation frameworks** for **web applications, APIs, and cloud-native architectures**. Expert in using **AI-powered tools** (ChatGPT, Claude, Windsurf) to accelerate test case generation, optimize test scripts, and enhance debugging efficiency. Proficient in **Playwright, Selenium, Postman, and K6** for performance testing. Strong expertise in **CI/CD pipelines** (Jenkins, GitLab CI), **BDD** (Cucumber), **AWS services** (Lambda, S3, Cognito), and **database testing** (Oracle SQL, PostgreSQL). Demonstrated success in **reducing regression cycles by 40%**, improving test coverage by 35%, and mentoring junior engineers in automation best practices.

TECHNICAL SKILLS SUMMARY

- Programming Languages:** JavaScript (Expert), Python (Advanced), TypeScript (Advanced), SQL, Java (Basics)
- AI-Powered Tools:** ChatGPT, Claude, Cursor, Windsurf IDE, GitHub Copilot
- Test Automation Frameworks:** Playwright, Selenium WebDriver, TestNG, RestAssured, Detox, WebDriverIO
- API Testing & Performance:** Postman, Newman, Playwright, Jest, Request, K6, JMeter, WireMock
- BDD, TDD & Design Patterns:** Cucumber, Page Object Model (POM), Data-Driven Framework
- CI/CD & DevOps:** Jenkins, GitLab CI/CD, GitHub Actions, Docker
- Cloud & Serverless:** AWS Lambda, AWS S3, AWS Cognito, AWS CloudWatch, Serverless Framework, Linux CLI, Shell Scripting
- Database Testing:** Oracle SQL, PostgreSQL, MySQL, MongoDB
- Version Control & Tools:** Git, GitLab, Jira, Confluence, TestRail
- Testing Methodologies:** Functional, Regression, Smoke, Sanity, Integration, E2E, White Box, Black Box

PROFESSIONAL EXPERIENCE

- NextGen Healthcare - Health Data Hub** Bangalore, India
Senior QA Automation Engineer / SDET-II June 2024 - Present
 - AI-Enhanced Test Automation:** Leveraged ChatGPT, Claude, and Windsurf IDE to generate 200+ optimized test scenarios and automate complex edge cases, reducing test script development time by 35%. Utilized Windsurf IDE for AI-assisted code refactoring and debugging.
 - Framework Architecture:** Designed and implemented scalable, data-driven automation framework using Cypress and Playwright with JavaScript, TypeScript, Bluebird, Lodash, Jest and Mocha for an Angular-based SaaS platform having Java microservices and AWS Lambda backend, achieving 85% test automation coverage.
 - CI/CD Pipeline Optimization:** Integrated Playwright test suites with Jenkins CI/CD pipelines, implementing parallel execution strategies that reduced regression testing cycles by 40% and deployment validation time from 2.5 hours to 90 minutes.
 - Cloud-Native Testing:** Conducted comprehensive end-to-end testing for AWS serverless architectures, validating Lambda function workflows, S3 data pipelines, Cognito authentication, and API Gateway integrations using custom automation scripts.
 - Mobile Testing:** Architected and implemented an end-to-end mobile automation suite using Detox with TypeScript for the platform's core features, leveraging its automatic synchronization to eliminate test flakiness and reduce execution times across iOS and Android emulators by 35%.
 - Database & Pipeline Validation:** Developed automated PostgreSQL/MySQL test scripts to validate data integrity across complex AWS S3 and Lambda data pipelines, identifying data consistency anomalies and preventing downstream corrupted syncs in pre-production.
 - API Contract Testing:** Established robust API testing framework using Cypress and Postman, ensuring 100% compliance with OpenAPI specifications and reducing production API defects by 30%.
 - Quality Leadership:** Led test planning, risk assessment, and release sign-off for 8+ major product releases. Collaborated with product managers, developers, and stakeholders to define comprehensive test strategies and acceptance criteria.
 - Defect Management:** Analyzed and resolved 150+ customer-reported production issues through systematic root-cause analysis, reducing critical defects by 28% through targeted test coverage improvements.
 - Mentorship & Training:** Mentored 1 junior QA engineers on Cypress automation, AWS testing strategies, BDD practices, and AI tool integration for test development.
- Tata Consultancy Services - India Post** Bangalore, India
QA Automation Engineer Dec 2021 - June 2024
 - E2E Test Automation:** Collaborated with QA lead to architect and develop comprehensive Cypress-Cucumber BDD framework from scratch, automating 70% of critical user journeys for India Post's Delivery and Postman Management System (DPMS) serving 5M+ users.
 - Multi-Framework Implementation:** Implemented dual automation approach using Cypress (JavaScript) for web UI and Selenium (Python) for legacy system integration, ensuring comprehensive test coverage across heterogeneous technology stack.

- **API Testing & Automation:** Designed and executed 150+ Postman API test collections validating REST API contracts. Automated API regression suite using Cypress, reducing manual API testing effort by 60%.
- **Database Validation:** Developed Oracle SQL test scripts for data integrity validation, implementing automated ETL testing procedures that identified 45+ data consistency issues pre-production.
- **Process Optimization:** Created Python-based automation tool that optimized 90% of manual reporting workflows, generating automated test execution reports and metrics dashboards for stakeholder visibility.
- **Quality Assurance Leadership:** Owned end-to-end QA lifecycle including requirement analysis, test planning, design reviews, test case development, execution coordination, and release sign-off for bi-weekly sprint deliverables.
- **Cross-Functional Collaboration:** Partnered with business analysts and product owners to refine acceptance criteria, participated in daily standups, sprint planning, and retrospectives in Agile/Scrum environment.

KEY ACHIEVEMENTS & PROJECTS

- **AI-Powered Test Data Generator:** Developed React-based web application integrated with ChatGPT API and product backend APIs to intelligently generate realistic patient profiles with diverse clinical datasets, reducing test data preparation time by 80% and improving test coverage comprehensiveness.
- **Test Suite Modernization:** Led initiative to refactor and modernize legacy test suite of 180+ obsolete test cases, re-engineering test scenarios aligned with current business requirements through stakeholder interviews and product owner reviews.
- **Performance Testing Framework:** Implemented K6-based performance testing framework for critical API endpoints, identifying and documenting performance bottlenecks that improved system response time by 40% under peak load conditions.
- **AI Tool Integration:** Pioneered adoption of AI coding assistants (GitHub Copilot, Windsurf) within QA team, creating best practice guidelines that accelerated team productivity by 25% and improved code quality.

EDUCATION

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| ● Asansol Engineering College | Asansol, India |
| ● <i>Bachelor of Technology in Electrical Engineering - CGPA: 8.4/10</i> | <i>Aug 2015 - July 2019</i> |
| ● Ram Krishna Mission, Deoghar | Deoghar, India |
| ● <i>Higher Secondary - Percentage: 91.40</i> | <i>May 2014 - April 2015</i> |

PROFESSIONAL DEVELOPMENT

- **Continuous Learning:** AWS Certified Cloud Practitioner (Pursuing), Cypress.io Certification, Advanced JavaScript & TypeScript, AI-Assisted Software Development
- **Areas of Interest:** Test Automation, AI/ML in QA, Cloud Testing, Performance Engineering, DevOps Practices