

PROFESSIONAL SUMMARY

QA Automation Engineer / SDET with hands-on experience designing and executing multi-layer test automation across UI, REST APIs, backend workflows, databases, asynchronous processing, and distributed application behavior. Experienced with Playwright/TypeScript, Python, Jest, PostgreSQL, Redis, and API testing, with a strong focus on defect investigation, state validation, idempotency, concurrency, and error-path testing.

TECHNICAL SKILLS

Test Automation: Playwright, TypeScript, Python, Selenium WebDriver, pytest, Jest, Page Object Model (POM), Custom Test Fixtures & Hooks, CI Test Reporters
API & Backend Testing: REST APIs, Supertest, Postman, Python Requests, JSON Schema Validation, Webhooks, Idempotency Verification, Concurrency & Race Hazard Testing, Session/401 Eviction
Database & State Validation: PostgreSQL, SQL (Complex Joins, Subqueries, Transaction Validation, Pessimistic Locking SELECT FOR UPDATE, Rollbacks), SQLite/Drift, Schema Integrity
Systems & Infrastructure: Redis (Distributed Locks SET NX, 24h TTL, Key Expiration), BullMQ (Job Enqueueing, Worker Processing, Exponential Backoff), Docker, Git/GitHub
Non-Functional & Quality: Accessibility Testing (WCAG 2.1 AA, Axe-core), Responsive Viewport Testing (Mobile/Tablet/Desktop), Fault Injection / Error-Path Testing, Performance/Load Testing (k6), Root Cause Analysis (RCA), Defect Lifecycle & Regression Engineering (test.fail)

QA & SDET PROJECTS

WRIGHTPAY - QA / SDET ENGINEERING PROJECT Case Study: ankitpandey.space/work/wrightpay

Full-Stack Cross-Border Payments Simulation | Next.js, NestJS, TypeScript, PostgreSQL, Redis, BullMQ, Playwright, Jest, k6

- Context:** Simulated cross-border payments platform created as an SDET engineering portfolio project to demonstrate multi-tier test architecture, distributed concurrency, state invariants, and defect investigation.
- Multi-Layer Test Architecture:** Architected and executed an automated testing suite achieving 608/608 core baseline passing tests in CI across Unit (130 Jest), API/Integration (277 Supertest), Functional E2E (49 Playwright), and Specialized Non-Functional suites (152 across A11y, Responsive, Error Handling, and Session Expiry).
 - Concurrency & Distributed Idempotency:** Verified distributed locking coordination and replay prevention under concurrent transfer requests; asserted Redis atomic locks (SET NX EX 86400) and payload SHA-256 validation to ensure duplicate requests return cached responses without duplicate wallet deductions.
 - Database & Transactional State Integrity:** Engineered containerized PostgreSQL integration tests asserting row-level pessimistic locking (SELECT ... FOR UPDATE), TypeORM atomic multi-table rollbacks on insufficient funds, and zero decimal rounding drift on ledger balance calculations.
 - Asynchronous Queue & Worker Testing:** Validated decoupled BullMQ background settlement workers; tested job dispatch reliability, 3-attempt exponential backoff retries, terminal failure transitions, and simulated clearing webhooks.
 - Defect Investigation & Root Cause Analysis:** Performed forensic defect triage across 8 flagship findings, including WP-QA-001 (asynchronous transfer failure leaving source wallet unrefunded due to missing compensating transaction) and WP-QA-007 (premature Redis key deletion causing concurrent polling waiters to timeout at 2,500ms and throw misleading 409 Conflict).
 - Known-Defect Regression Suite:** Maintained a dedicated 9-test regression suite using Playwright's test.fail() annotation to continuously assert active bug reproductions in CI without turning baseline build suites red.
 - Local Performance Benchmarking:** Executed local k6 load testing across 6 scenarios (142,280 total requests, reaching 8,272 req/s in local endpoint benchmark probing), establishing baseline latency metrics (p95 18ms) and verifying zero distributed lock leaks under load.

Context: Independently developed macOS productivity application with local data persistence and external API integrations.

- Developed a macOS productivity application using Flutter/Dart with local SQLite persistence through Drift and external OpenAI API integrations.
- Implemented API integration workflows with structured response validation, error handling, retry behavior and rate-limit handling.
- Built and validated local SQLite persistence using Drift, including relational schema design, migrations and query-level data integrity checks.
- Implemented structured logging and diagnostic error handling to investigate API and asynchronous workflow failures during development and testing.
- Performed exploratory and functional validation throughout development and packaged the application for macOS testing.

PROFESSIONAL EXPERIENCE

Founder & Sole Proprietor

2021 - Present

Numpy Marketing Solutions | 2021 - Present | Textile Distribution & Software/Data Solutions | India

- Founded and operated a GST-registered textile distribution and software/data solutions business, managing B2B distribution operations and relationships with established regional brands in the Uttar Pradesh market.
- Developed internal SQL-driven data analytics dashboards and reporting workflows for local textile businesses to monitor operational and business data.
- Built data validation, reporting and analysis workflows to identify discrepancies, track operational metrics and support business decision-making.
- Applied technical problem-solving to software, API/data and operational issues encountered during business activities, including data validation and troubleshooting.
- Managed client/vendor communication, business coordination and technical requirements as a sole proprietor while independently handling both operational and technology responsibilities.

Programmer Analyst - QA & Application Testing

Oct 2016 - Feb 2018

Cognizant Technology Solutions | India | Client: AmeriHealth Caritas (US Healthcare HIPAA Systems)

- Executed functional, regression, and integration test cycles for internal healthcare web applications and reporting dashboards serving enterprise healthcare clients.
- Identified, documented, and tracked software defects through the full defect lifecycle - from discovery through root cause analysis (RCA), developer escalation, fix verification, and closure.
- Analyzed API request/response logs and backend system behavior to isolate failure points in healthcare data integrations and workflow pipelines.
- Collaborated directly with development teams to reproduce complex defects, validate bug fixes, and ensure release readiness under strict SLA requirements.
- Utilized Python and SQL to investigate data pipeline defects, validate downstream reporting accuracy, and support backend data integrity checks.
- Produced test documentation, defect reports, and knowledge base articles for internal QA teams and client-facing stakeholders.

Technical & Client Operations

Mar 2018 - Aug 2019

Mahaveer Polymers | India

- Managed technical query resolution and B2B client onboarding, translating operational requirements into structured solutions.
- Built SQL queries and data dashboards to monitor performance metrics, identify data discrepancies, and support operational decision making.

EDUCATION

Master's in Computing (Data Analytics)

2020

Dublin City University, Ireland

Bachelor of Engineering - Computer Science

2016

MIT College of Engineering, Pune, India

CERTIFICATIONS

- Selenium WebDriver with Python + Frameworks - Udemy (Rahul Shetty Academy)
- Python SDET: REST API & Backend Automation - Udemy