TAPAS KUMAR PATRA

Automation Engineer | Python Developer (Tools & Frameworks)

Email: tapas.patra0406@gmail.com Mobile: +91 8249124954
LinkedIn: linkedin.com/in/tapas-kumar-patra Portfolio: tapas-patra.github.io

PROFESSIONAL SUMMARY

Automation Engineer with **4+ years** of experience designing test frameworks, driving module automation, and building Python-based tools that streamline engineering workflows. I have engineered automation for large-scale infotainment platforms, delivered major test migrations, and created internal tools that increased throughput across multiple teams. My work integrates structured automation with backend development, enabling me to design utilities, APIs, dashboards, and data-driven testing systems that enhance delivery quality and reduce manual effort.

CORE COMPETENCIES

- **Automation & QA**: Selenium WebDriver, Appium, Pytest, Robot Framework, Slash Framework, Data-Driven Testing (DDT), REST APIs, Android Automotive, QNX, Test Framework Architecture, Functional Testing, Regression Testing, Integration Testing, Smoke, Sanity, Android & iOS Mobile Testing, API Testing
- **Python Development**: FastAPI, Django, PySide2/6, REST APIs, WebSocket
- **Tools & DevOps**: Git, GitHub, TestRail, Jira, YAML, JSON, PostgreSQL, Jenkins, GitHub Actions, CI/CD, Confluence
- **Automotive Modules & Technologies**: Audio, NFC, Wi-Fi, Hotspot, Media, Connectivity, Settings, CAN, AUTOSAR, Diagnostic Engineering Tool (DET), FNV3, FNV4
- **Practices**: Test Framework Design, Code Review, Defect Analysis, Requirement Mapping, Software Testing Life Cycle
- **Project Management**: Agile Methodology, Scrum Framework, Sprint Planning, Stakeholder Management, Cross Functional Team Leadership
- **Artificial Intelligence & Machine Learning**: Retrieval-Augmented Generation (RAG), Mistral AI, Semantic Search, Vector Embeddings
- **Databases & Data Storage**: PostgreSQL, Redis, Supabase, MongoDB

PROFESSIONAL EXPERIENCE

Automation Engineer | Wipro Technologies

Bengaluru, India | Oct 2021 – Present

Automation & Framework Ownership

- Engineered end-to-end automation frameworks for Android Automotive and QNX infotainment systems, boosting overall module coverage by 60% across Audio, Media, Radio, Connectivity, Wi-Fi, and Settings.
- Authored **600+ automated** test scripts using Selenium, Appium, and Slash, establishing scalable YAML-driven data execution patterns adopted by multiple teams.
- Implemented UI-Auto-Gen to auto-generate UI properties and unit tests, cutting script setup effort by ~50% and ensuring consistent UI mappings.
- Designed Wi-Fi and Hotspot HMI automation, achieving 60% full coverage and 80% high-priority completion, directly supporting PI delivery goals.
- Produced DDT frameworks, YAML configs, CSV structures, and service APIs for NFC automation; executed test cycles and uncovered **200+ defects** with complete log traceability.
- Developed and validated RESTful APIs using FastAPI and Pytest, designing reusable test suites for data validation, authentication, and performance verification across microservices.
- Integrated REST API validation into existing automation frameworks, reducing manual verification time by 70% and improving test reliability.
- Performed load and stress testing on APIs using Python scripts and integrated logging dashboards for latency and throughput monitoring.
- Built request–response validators for JSON payloads and schema conformance, ensuring API stability across multiple microservices.

Test Case Execution & Analysis

- Executed **1500+ test cases** across Audio, Media, USB, NFC, and Wi-Fi modules in Phoenix and RIGIL environments, maintaining consistent execution quality.
- Verified SSH, CAN, and HMI logs to ensure accuracy in regression cycles, feature validation, and root-cause investigations.
- Evaluated defect behaviour, retested fixes, and coordinated with developers for timely closure and clarifications.

Tool Development & Productivity Enhancements

- Built **Rail Bridge** to migrate **4000–5000 test cases** between Phoenix and RIGIL TestRail servers, enabling multi-module imports where no tooling existed earlier.
- Created **Test-Crafter** to auto-generate test runs, plans, and milestones, strengthening execution planning across **20+ projects**.
- Developed **TestRail-Insight** dashboard aggregating **2000+ test runs**, bypassing TestRail's 100-run UI limitation and providing advanced quality analytics.
- Engineered **RTM Helper Tool** (PySide2) to map **6000+ test cases** to Jira requirements across 12 modules, eliminating 100% manual RTM effort.

Leadership, Coordination & Support

- **Mentored 6 junior** engineers on automation design patterns, Python best practices, and framework adoption.
- Directed sprint activities, reviewed **50+ pull requests monthly**, and coordinated onsite–offshore execution across 5+ modules.

Customer & Stakeholder Management

- Coordinated with Google (GAS - Google Automotive Services) teams for Media module integration, managing requirements clarification, defect triaging, and feature validation for YouTube Music, etc.
- Served as primary technical liaison between Wipro and OEM clients, facilitating requirement reviews, demo sessions, and PI acceptance across 8+ delivery cycles.
- Conducted bi-weekly stakeholder sync meetings to review test coverage, escalate blockers, and translate customer feedback into actionable test scenarios, reducing requirement ambiguity by ~35%.
- Maintained proactive communication discipline through structured status reports and escalation protocols, contributing to 90% on-time delivery across managed modules.

TECHNICAL PROJECTS

AI-Powered Portfolio Chatbot

FastAPI | Mistral AI | Supabase | RAG | JavaScript

- Designed a retrieval-based chatbot using vector embeddings and semantic search, improving query accuracy by ~40% compared to baseline keyword matching.
- Deployed a FastAPI backend with conversation management and embedding pipelines, handling 100+ concurrent requests with <120 ms response time.
- Integrated Supabase vector storage to deliver sub-second (<800 ms) contextual responses across 1000+ indexed documents.

Pocket Pad — Remote Control Application

FastAPI | WebSocket | JavaScript

- Programmed a real-time smartphone-to-PC control system, achieving <100 ms latency and 95% response stability during continuous interaction tests.
- Implemented WebSocket channels for bidirectional communication, supporting 5000+ messages/min with zero packet loss in QA stress tests.

EDUCATION

Master of Technology in Software Systems

Birla Institute of Technology and Science (BITS), Pilani | 2021–2025

Bachelor of Computer Applications

Narasingh Choudhury Autonomous College, Jajpur | 2018–2021

AWARDS & RECOGNITION

20+ awards, including Extraordinaire, Inspiring Performance, Victory League, Beyond the Call of Duty, and Stewardship recognitions. Two consecutive **5/5 ratings** for consistent delivery across automation, tooling, and module ownership.