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, Slash Framework, Data-Driven Testing (DDT), TestRail, Android Automotive, QNX, Test Framework Architecture, Functional Testing, Regression Testing, Integration Testing
- **Python Development**: FastAPI, Django, PySide2/6, REST APIs, WebSocket
- **Tools & Systems**: Git, GitHub, Jira, YAML, JSON, PostgreSQL
- **Automotive Modules**: Audio, NFC, Wi-Fi, Hotspot, Media, Connectivity, Settings
- **Practices**: Test Framework Design, Code Review, Defect Analysis, Requirement Mapping,
- **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

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 1000+ 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.

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 50+ projects.

- Developed TestRail-Insight dashboard aggregating 8000+ 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.

Operational Discipline

- Communicated blockers proactively and responded promptly to stakeholder queries, ensuring uninterrupted development and test flow.

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.

ADDITIONAL TOOLING INITIATIVES

Created Eesewiki documentation for Rail Bridge and Test-Crafter, standardizing onboarding across 10+ teams and reducing ramp-up time by ~40%.
Delivered KT sessions on Slash Framework, GitHub Copilot, automation design, and tool usage, training 25+ engineers and accelerating internal tool adoption by ~50%.

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.

ADDITIONAL INFORMATION

Languages: English, Hindi, Odia
Interests: Backend engineering, developer tools, automation systems