

Muhammad Hammad Faisal

QA Automation Engineer | Framework Architect | Bot & Scraping Specialist

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📍 Lahore, Pakistan

PROFESSIONAL SUMMARY

QA Automation Engineer with 3+ years of experience designing and scaling test automation frameworks for web, mobile, and data-intensive applications. Expert in Playwright, Cypress, WebdriverIO, Selenium, and Appium across TypeScript, JavaScript, and Python. Architected cross-platform frameworks using factory and abstraction wrapper patterns adopted across multiple production projects. Hands-on with CI/CD pipelines on GitHub Actions, GitLab CI, and Jenkins. Proven ability to solve high-complexity automation challenges — bot detection bypass, async flow control, large-scale codebase refactoring, and framework migrations — under tight deadlines.

PROFESSIONAL EXPERIENCE

Software Engineer

[Arbisoft](#)

Lahore, Pakistan

June 2024 – Present

- Refactored and consolidated 23 payer integrations under a unified bot ID — resolved session conflicts and merged shared files across all 23 payers within a 2-week deadline; received public recognition and compensatory leave from Team Lead.
- Engineered anti-detection engine bypassing AWS CAPTCHA, Cloudflare, and reCAPTCHA v2/v3 using navigator mocking, dummy extension injection, rotating residential proxies, and Patchright stealth fork — unblocked multiple critical client sites.
- Architected a state-based credential rotation system managing thousands of bot accounts with zero bans or flags across all active scraping targets.
- Resolved a sequential async-iteration constraint (no loops allowed) using async library's mapSeries/eachSeries, enabling reliable multi-step scraping flows under strict client restrictions.
- Proposed and built a FastAPI microservice for PDF data extraction using the factory pattern; selected over Node.js for superior Python PDF library support — now used across multiple projects.
- Standardized TypeScript conventions and PR workflows across the team (find over filter+[0], unknown over any); patterns adopted on multiple active projects.
- Built an Outline VPN client clone in Python (ShadowSocks) to unblock geo-restricted scraping targets that macOS system settings could not reach.

Jr. Software Engineer — Test Automation

[Arbisoft](#)

Lahore, Pakistan

May 2023 – June 2024

- Designed a framework abstraction wrapper over Cypress enabling full migration to Playwright via a single-file swap — pattern adopted across multiple Arbisoft projects including Appium-to-WebdriverIO transitions.
- Solved a dynamic recursive Q&A automation challenge with variable question depth and branching paths — implemented recursive traversal replacing fragile fixed-loop logic.
- Built an enterprise cross-platform framework using WebdriverIO + factory pattern to unify Android, iOS, and web configurations with shared logic and platform-specific flexibility.
- Set up and managed local Appium + Selenium Grid infrastructure enabling parallel distributed execution across mobile and web targets.

- Mentored teammates on WebdriverIO, Selenium Grid, and parallel test execution; led internal knowledge-sharing sessions on framework setup and best practices.
- Helped onboard the Zuub project to Arbisoft — established automation infrastructure and quality standards from the ground up.

Jr. Software Engineer

Ginkgo Retail

Lahore, Pakistan

August 2022 – May 2023

- Built and maintained responsive web applications using React and Django across the full development lifecycle in an agile environment.
- Developed a Learning Management System end-to-end during the internship phase — handled frontend (React), backend (Django), and deployment.
- Gained early exposure to QA processes including manual testing, bug reporting, and validating feature completeness against acceptance criteria.

TECHNICAL SKILLS

TEST AUTOMATION

Playwright, Cypress, WebdriverIO, Selenium, Appium, Puppeteer, PyTest, Selenium Grid, Page Object Model

PROGRAMMING LANGUAGES

TypeScript, JavaScript, Python, Java, HTML5, CSS3

CI/CD & DEVOPS

GitHub Actions, GitLab CI, Jenkins, Git, Docker

API TESTING

Postman, Supertest, REST APIs

DESIGN PATTERNS

Factory Pattern, Wrapper/Abstraction Pattern, Page Object Model, Recursive Patterns

TOOLS & PLATFORMS

Jira, Allure Reports, Mocha, Firestore, Cloud Functions, Cloud Run, Postman

KEY PROJECTS

Framework Abstraction Wrapper (Cypress → Playwright)

Abstraction layer over Cypress enabling entire codebase migration to Playwright via a single-file update. Adopted across multiple Arbisoft projects for framework transitions.

Technologies: Cypress, Playwright, TypeScript, Design Patterns

Anti-Detection Scraping Engine

Custom bot engine with navigator mocking, dummy extension injection, rotating residential proxies, and Patchright stealth integration. Bypassed AWS CAPTCHA, Cloudflare, and reCAPTCHA v2/v3 across multiple production sites.

Technologies: Playwright, Puppeteer, TypeScript, Patchright

WebdriverIO Cross-Platform Automation Framework

Enterprise-grade framework using factory pattern to unify Android, iOS, and web test configurations with parallel execution via Selenium Grid and Allure reporting.

Technologies: WebdriverIO, TypeScript, Appium, Selenium Grid, Allure Reports

GitHub: github.com/M-Hammad-Faisal

Swag Labs Testing Framework

Python + Playwright test automation framework with POM, parallel execution, Allure reporting, and GitHub Actions CI/CD integration.

Technologies: Python, Playwright, PyTest, Allure Reports, GitHub Actions

[GitHub: github.com/M-Hammad-Faisal/Website-Tester](https://github.com/M-Hammad-Faisal/Website-Tester)

JSON Compare Tool

Professional JSON comparison tool with GitHub-style diff visualization, CLI and web interfaces.

Technologies: JavaScript, Node.js, HTML/CSS, CLI

[Live: m-hammad-faisal.github.io/json-compare/](https://m-hammad-faisal.github.io/json-compare/) | [GitHub: github.com/M-Hammad-Faisal/json-compare](https://github.com/M-Hammad-Faisal/json-compare)

EDUCATION

Bachelor of Engineering — Computer Engineering

[University of Engineering and Technology, Lahore](#)

October 2019 – May 2023

CERTIFICATIONS

Programming for Everybody (Getting Started with Python) — University of Michigan via Coursera

Python Data Structures — University of Michigan via Coursera

Using Python to Access Web Data — University of Michigan via Coursera

Capstone: Retrieving, Processing, and Visualizing Data with Python — University of Michigan via Coursera

TypeScript Variables and Data Types — LinkedIn Learning

ADDITIONAL

- **Open Source:** Active contributor to WebdriverIO repository
- **Leadership:** Board of Governor and Director of Graphic Design at ACM UET Lahore (2020–2023)
- **Languages:** English (Professional), Urdu (Native), Punjabi (Native)