

KUMAR SOURAV

AI ENGINEER AND QA ARCHITECT



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Lead SDET & QA Architect with 12+ years scaling mission-critical systems. I design intelligent testing ecosystems that serve as force multipliers rather than bottlenecks. By integrating RAG, MCP, and autonomous AI Agents into CI/CD pipelines, I automate complex test generation and root-cause analysis—driving down infrastructure costs and embedding "Quality as Observability" into every release. Furthermore, I specialize in building and managing the underlying containerized infrastructure (Docker, Kubernetes, Nomad, AWS) required to run these systems at a global scale

TECHNICAL & ARCHITECTURAL SKILLS

AI:

AI-assisted Test Intelligence, AI Pipelines, Autonomous AI Agents, RAG Strategies, MCP, Prompt Engineering, AI Eval Frameworks

CI/CD & Cloud:

CI/CD Pipelines (Jenkins, GitLab), Docker, Kubernetes, Nomad, AWS, Observability

Quality Engineering & Strategy:

Quality Engineering Architecture, Test Strategy & Standards, Test Orchestration, Non-Functional Testing Strategy, Cost Optimization

Languages & Frameworks:

Python, Java, Flask, FastAPI, Groovy

Automation & Testing:

API & UI Automation, Test Framework Design, Service Virtualization, Performance & Accessibility Testing

EXPERIENCE

Q2 Software

Nov. 2021 - Present

Bengaluru, India

Senior Lead Software Engineer in Test

- Autonomous Test Generation Pipeline: Architected and deployed an enterprise-wide AI testing pipeline from the ground up, utilizing RAG and vector databases (pgvector) to securely ground LLM generation within existing repository structures and POM/helper libraries.
- Automated PR/MR Coverage Agent: Engineered an AI agent directly into the CI pipeline that actively monitors Merge Requests (MRs), detects missing unit tests, and dynamically generates the required test coverage prior to peer review.
- Cost Optimization: Re-architected test infrastructure to lower operational costs by over 66% while keeping platform stability intact
- Cloud-Native Orchestration & Latency: Architected and scaled organization-wide test execution frameworks (Python, Flask, Selenium) across containerized infrastructure (Docker, Nomad, K8s). Optimized these distributed CI/CD pipelines to reduce test execution latency by over 70% and accelerate release cycles..
- Leadership & Strategy: Led and mentored a central Quality Engineering team of 7 SDETs, defining the long-term technical roadmap, quality standards, and automation practices across the SDLC.

Firebucks

Feb 2020 - Oct 2021
Bengaluru, India

LEAD AUTOMATION ENGINEER

- Designed and implemented extensible test framework architecture using Python, applying SOLID principles, custom runners, and reusable libraries
- Automated API and UI test cases using Python and Postman, integrating with AWS cloud infrastructure.
- Managed CI infrastructure, enabling rapid feedback cycles for development teams.

Qube Cinema

Dec 2018 - Feb 2020
Chennai, India

SENIOR SOFTWARE ENGINEER - LEVEL 2

- Automation of test cases from scratch using a custom framework in Python
- Adding functionality to a new automation framework
- Maintenance of multiple automated regression tests
- Dockerizing and mocking services to create fast, and scalable component level tests

Mindfire Solutions

Aug 2016 - Dec 2018
Bhubaneswar, India

SENIOR TEST SOFTWARE ENGINEER

- Cucumber, Rest Assured, Github, Jenkins, ReadyAPI, Selenium
- Development and maintenance of API Automation Framework using SOAPUI/ReadyAPI
- Developed test cases in Cucumber using RestAssured to automate the APIs
- Jenkins for continuous integration of the project

Tata Consultancy Services

Sept 2013 - Aug 2016
Kolkata, India

AUTOMATION TEST ENGINEER

- Development of Automation Framework using UFT (QTP)
- Application Lifecycle Management using HP QC (HP ALM)
- Develop & deploy automated solutions using Open Test Architecture (OTA) & Automation Object Model (AOM) techniques
- Version management of code using Serence PVCS

EDUCATION

College of Engineering
and Technology,
Bhubanwsvar, Odisha

B. TECH

Information Technology

2009 - 2013

PUBLICATION

Kumar Sourav, Debi Prasad Mishra, DDoS Detection and Defense: Client Termination Approach,
Proceedings of the CUBE International IT Conference and Exhibition 2012,
<http://doi.acm.org/10.1145/2381716.2381859>

CERTIFICATIONS

- ISTQB Certified Tester: ISTQB - International Software Testing Qualifications Board, ITB-CTFL-0070292
- Brainbench C++ Fundamentals;, License Number : 11065809