

Charles Hayes

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Senior Software Development Engineer in Test

CAREER SUMMARY

Senior Software Development Engineer in Test with more than ten years of experience designing scalable automation frameworks, test strategies, and CI/CD quality solutions for complex applications and distributed systems. Experienced building UI, API, end-to-end, integration, and performance automation using TypeScript, Playwright, JavaScript, Python, Java, and modern test frameworks. Proven technical leader who partners with developers, product teams, and platform engineers to improve testability, diagnose failures, establish quality practices, and deliver reliable software through continuous integration and delivery.

CORE COMPETENCIES

LANGUAGES

TypeScript, JavaScript, Python, Java, C++, SQL

TEST AUTOMATION

Pytest, Playwright, Serenity BDD, Cucumber, Jest, Selenium WebDriver, RestAssured, Karate API, Postman/Newman, Robot Framework, Gatling

CI/CD & DEVOPS

GitLab CI/CD, Jenkins, Azure DevOps, Docker, Kubernetes, Helm, Ansible

OBSERVABILITY & REPORTING

Elasticsearch, Kibana, Quality Dashboards, Serenity BDD Reports, Custom Reporting Solutions

CERTIFICATIONS

SAFe 6.0 for Teams

CompTIA Security+

EDUCATION

1990 - 1992

Spartan College of Aeronautics and Engineering

Avionics Technology; FCC License

PROFESSIONAL EXPERIENCE

Senior Software Engineer — Quality Engineering & Test Automation
Frontier Technology Inc / RAFT - July 2023 - Present

- Lead test automation architecture and quality-engineering improvements for a distributed cybersecurity platform spanning web applications, REST APIs, network sensors, Kafka, Elasticsearch, and containerized services.
- Modernized a fragile UI automation framework by introducing Playwright and reusable test patterns, improving test reliability, maintainability, execution speed, and suitability for CI/CD execution.
- Design and maintain automated UI, API, integration, infrastructure, and end-to-end tests that validate application behavior across multiple services and deployment environments.
- Integrated automated smoke, regression, API, UI, performance, and infrastructure validation into GitLab CI/CD pipelines with quality gates for development and QA environments.
- Developed Pytest-based backend infrastructure tests using Paramiko to securely connect to remote hosts, validate system services and data flows, and verify operational health across distributed environments.
- Architected a centralized quality-observability platform using Elasticsearch and Kibana to aggregate results across frameworks, applications, teams, and pipelines and expose failure trends, stability metrics, and release-quality indicators.
- Investigate failed tests across application, network, authentication, data, and infrastructure layers; distinguish product defects from environment and automation failures and provide actionable root-cause findings.
- Led the platform team's adoption of Ansible roles by defining a modular playbook architecture and developing the initial reusable roles that established the pattern for continued refactoring.
- Collaborate with developers, testers, DevOps engineers, and stakeholders to improve testability, define automation priorities, and strengthen testing practices throughout the delivery lifecycle.
- Develop reusable automation utilities, test-reporting adapters, and environment-management components in Python to support consistent test execution, reporting, and analysis across deployment environments.

Technologies: Playwright, Python, Typescript, Javascript, Cypress, GitLab CI/CD, Docker, Ansible, Elasticsearch, Kibana

PROFESSIONAL EXPERIENCE

Senior Integration and Test Engineer

Actalent / Boeing - July 2020 - July 2023

- Led automation, CI/CD, and integration-testing efforts for Boeing's Protected Tactical Enterprise Services program, validating complex distributed systems that include hardware in the loop, emulators, and interfaces for controlling tactical communication systems.
- Created and maintained test environments using Docker and Kubernetes to support integration testing of microservices. Worked with Helm charts to manage deployments and configuration of test environments, enabling consistent and repeatable testing across development and QA stages.
- Built and maintained Jenkins CI/CD pipelines to execute automated regression and integration tests as part of delivery workflows. Created Jenkins shared libraries to promote reuse and standardization of pipeline code across teams.
- Integrated automated test execution with Jira and Zephyr to provide traceability among requirements, risk areas, test cases, and execution results, partnering with product owners and systems engineers to align coverage with system priorities.
- Developed and automated low-level integration tests using Python to validate the configuration of network infrastructure components, including SNMP settings on network switches, ensuring proper system behavior and compliance with operational requirements.

Technologies: Python, Pytest, Jenkins, Docker, Kubernetes, Microservices, Helm, Rancher, CI/CD, Networking, Jira, Zephyr

Lead Software Engineer in Test

TEKsystems - September 2019 - July 2020

- Advised and mentored client teams on continuous delivery, continuous testing, and effective automation framework design across multiple engagements.
- Designed and implemented a scalable BDD automation framework at Exelon using Serenity BDD, TypeScript, and Cucumber with the Screenplay pattern to improve readability and maintainability.
- Integrated automated tests with Azure DevOps pipelines and helped teams strengthen reporting, defect analysis, and feedback loops.
- Helped an American Family Insurance engineering team evaluate API testing strategies and selected Karate API because its readable DSL allowed a team with limited programming experience to ramp up quickly without a steep learning curve.
- Used mob programming and hands-on coaching to raise team capability in API automation, framework design, and sustainable testing practices.

Technologies: UI/API Test Automation, TypeScript, Selenium, Serenity BDD, Cucumber, Azure DevOps, Karate API, Continuous Testing

Senior Software Engineer in Test

T-Mobile - June 2018 - September 2019

- Architected and developed a full-stack test automation framework for the T-Vision Home Entertainment product using Java, Gradle, Selenium WebDriver, Selenide, and Allure.
- Automated API regression testing with Postman and Newman to expand repeatable coverage across service interfaces.
- Solved difficult UI automation challenges for an embedded browser running on a TV set-top box, including remote-control driven interactions and nontraditional navigation patterns.
- Promoted test-driven development by leading monthly Lunch and Learn sessions and coaching developers on unit testing techniques.
- Helped developers improve unit testing of UI components using Jest, Sinon, mocks, and spies.
- Recognized for exceptional impact in test automation with multiple merit-based salary increases and stock awards within the first year.

Technologies: UI/API Test Automation, Java, JavaScript, Gradle, Selenium, Selenide, Allure, Jest, Sinon, Postman, Newman

Senior Software Engineer in Test

The Judge Group (contract) - January 2018 - June 2018

- Designed a custom REST API test automation framework for Dish Network's back office products. Leveraged Serenity BDD with Cucumber for developing the test scripts and used Java 8, JUnit 5, and Selenium WebDriver for the framework.
- Utilize developer toolsets such as Chrome DevTools and Charles Proxy to capture Logcat traces, inspect API payloads, and simulate real-world network constraints.
- Conducted data integrity and system-level validation across backend microservices, messaging systems, and database layers.

Technologies: Serenity BDD, Cucumber, Java 8, JUnit 5, Selenium WebDriver, Chrome DevTools, Charles Proxy

Senior Software Engineer

ITEC (contract) - June 2017 - December 2017

- Supported an organization-wide transition from a traditional waterfall development to a DevOps delivery model as a member of the DevOps Architecture team.
- Analyzed and documented existing engineering processes, practices, and toolchains and helped design future state DevOps workflows and standards.
- Developed architecture documentation using Phillippe Kruchten's 4+1 architectural view model to communicate architectural concepts to technical and non-technical stakeholders.
- Guided engineering teams through the adoption of new DevOps processes, practices, and tooling, helping teams understand how the changes fit into their software development lifecycle.

Technologies: Architecture, DevOps, CI/CD, Jenkins, Build Tools, UML Modeling, Technical Documentation, Presentations

Senior Software Engineer in Test

TEKsystems (contract) - April 2016 - December 2016

- Lead automation efforts for microservices used in Comcast's video activation platform, ensuring high availability and performance at scale.
- Developed automated performance and load tests for API endpoints using Scala and Gatling, and leveraged service virtualization to simulate dependencies and test system behavior under various conditions.

Technologies: Scala, Gatling, Service Virtualization, Microservices, API Testing, Performance Testing