

## Senior / Staff Software Engineer Test Automation

### SUMMARY OF QUALIFICATIONS

Senior Software engineer with 20+ years progressive experience developing software products and bringing them to market. Experience with OS Internals, Application layer and REST APIs. Expertise in building tools, infrastructure and test suites to enhance software quality. I understand complex systems, break them down to effective software validation strategies and run them through a continuous integration system with reports to team/management.

**Qualities:** Excellent written and verbal communication skills, highly organized and quickly grasp new concepts. Self-driven, goal driven, detail oriented, ability to work independently with minimal supervision and in large cross functional teams. Recruited, trained and lead team of SDET's

**Programming Languages:** OOP, Python, Obj-C, C/C++, Java, Bash, Golang briefly

**Development Platforms:** Linux, iOS, Android, Mac

**Development Environments & Tools:** PyCharm, Xcode, Apple Instruments/JavaScript, Eclipse, Jenkins CI, Travis CI, JIRA, confluence, Git, Perforce, Python Nosetests, Junit, Flask web framework, MongoDB, Robo3T, Postman, Wireshark, Docker, Kubernetes, AWS, VBox, VMWare, JSON, XML,

### EDUCATION

**Bachelors of Science**, Computer Science, University of Utah, Salt Lake City, UT

1992

### PROFESSIONAL EXPERIENCE

VIVINT SMARTHOME, Lehi, UT

**Sr. Software Development Engineer Test Automation**

Sept 2017- Mar 2020

Used/Improved/developed from scratch several internal test frameworks/tools to provide CI test automation for various REST API Endpoints for several projects within Vivint's Product ecosystem.

- Work with Product Management, Engineering, SDETs, to understand requirements and develop solutions to validate products to increase customer satisfaction and decrease support costs.
- Recruit/Mentor SDETs, Triage failures, perform code reviews.
- Architected/Developed a Mocking system, integrated into our Kubernetes cluster, for our new Car Guard (OBD2) device. Mocked out portions of the Mojio REST API, enabled automating testing of onboarding, device creation, account linking to our smart home system, geo-fencing, which could only be tested manually, saving hours of work each week.
- Developed several automated tests for the new thermostat/humidifier device.
- Developed several automated tests for a new Property Management team, which required enhancements to current testing framework, recruited/trained another person to take this over.
- Maintained testing of our AI system which was put on hold due to lack of resources to continue. Wrote tests and ensured that the API was not accidentally broken by non-compliant dev check-ins Ported Thermostat test code to work with Google Nest thermostat. Additional misc. projects.
- Architected/Developed test framework utilizing python Nosetests to validate multiple inputs and multiple outputs to automate 480 combinations testing our internal AI vs User initiated home scene transitions, validated all smart home device results, for automation settings per device.
- Developed several backend test suites to validate onboarding a new customer using a Mobile phone to our Vivint smart home system via REST endpoints.
- Technologies used: Python, Nosetest, Flask Web framework, MongoDB/Robo3T, Postman, JSON, Docker, Kubernetes, Git, Jenkins, JIRA, Confluence

HEALTH TAP, Palo Alto, CA

**Sr. Mobile Software Engineer**

Aug 2017 – Sept 2017

Created a CI build for their HealthTap iOS application.

SENTIENT, San Francisco, CA (<https://www.sentient.ai>)

**Staff Software Engineer Test Automation, Distributed AI Platform**

June-2015-July-2017

Formalized and enhanced CI/CD process and QE automation techniques, as initial QE in the Distributed AI Platform Team of about 25 people the majority being Ph.D. AI Researchers and Principal Scientists. Evolutionary Algorithms (EA)

- Significantly improved and enhanced Evolutionary Algorithm (EA) CI/CD test automation framework and test suites with new features and tests. Eventually porting the entire framework from ~20 Bash scripts to Python utilizing the Python Nosetest Framework, which simplified maintenance of the platform and triaging issues with reliable debug and reporting information.
  - Developed new test suites to validate the EA framework including tests for a new work unit server added to the flow to work with our SCALE platform.
  - Instrumental in company-wide initiative to develop CI/CD systems across all teams and products.
  - Co-Developed CI/CD system for Deep Learning team utilizing Jenkins, Stash and SonarQube.
- SCALE Team– Internal Massive Distributed Computing Platform for AI utilizing millions of distributed CPU cores and up to 5000 GPU cards.
- Created and enhanced tests and Implemented CI/CD system for SCALE in GitHub/Travis, post build, integration tests were run on AWS Cloud Formation with final built/tested results stored on AWS S3. Validating all code changes and simplifying release to production servers when ready.
  - Modified tests and Implemented CI/CD Jenkins system on AWS g3 instance to run Deep Learning integration tests on all supported environments, CPU, GPU, AWS using our SCALE platform.
  - Audited and Created quality test plan for SCALE platform and specific test plans for areas under active development and those not deemed robust.
  - Developed Integration tests using Golang for new features for our SCALE platform.
  - Technologies used: Linux, Bash, Curl, Python, Nosetest, Docker, Git, Bamboo, Jenkins, Travis, AWS, JIRA, Confluence, Golang

OPERA SOFTWARE ASA, NETWORK SOLUTION / SKYFIRE LABS, INC. Mountain View, CA

**Sr. Software Development Engineer in Test, Mobile Automation iOS/Android** Feb-2012-May 2015

Recruited, Mentored, lead team of SDET's to increase automation capabilities within company.

Product Development experience:

- Developed iOS App, utilizing AWS to automate and measure several network and client statistics to benchmark performance for new VPN product "Opera MAX".
- Productizing app, refactored with CoreData, implemented UI/UX design for app store.
- Ported portions of iOS client/network measurement app to Android for similar purposes.
- Developed an iOS widget, POC for our product.
- Developed Several Automated UI/UX test suites for iOS iPad and iPhone devices using Apple Instruments and JavaScript for cloud based applications. Automating 90% of custom iOS browser.
- Developed in house test automation frameworks from the ground up utilizing open source frameworks and custom code to automate UI portions of Skyfire browser products utilizing cloud based applications on Android. Created functional, memory, longevity, and analytics test suites.
- Enhanced Hudson CI/CD system with tests running on actual devices.
- Enhanced web services test automation framework and developed several new JUnit test suites.
- Developed quality processes to establish robust and transparent QE practices across teams.
- Developed, reviewed detailed test plans and test cases for Opera MAX and Skyfire web browsers.

- Created detailed Wireshark cell network analysis of browser extension framework usage.
- Researched and evaluated commercial and open source tools for Android/iOS UI test automation.
- Technologies used: Android/Java/JUnit, iOS/Obj-C, JavaScript, AWS, Linux, Wireshark.

ADOBE SYSTEMS, INC. San Jose, CA

**Sr. Software Quality Engineer** Digital Home

Feb-2009-Jan-2012

- Sr. Quality Engineer: Initial local Quality Engineer in a new very small dynamic and extremely fast paced globally diverse team to establish and bring Adobe's Flash/AIR platforms to Linux based Internet connected televisions and digital devices for the future Digital Home market.
- Facilitated our SoC and TV partners to bring up Adobe Flash, and AIR platform on their Internet enabled TVs and set top boxes. Reported, tracked and validated issues with their hardware.
- Developed AIR Native Extension test plan. Assisted in developing engineering unit test suite using C++ and AS3.0 for new feature enabling partners to create Native Extensions for AIR devices.
- Developed comprehensive Internet AV Playback test plan, test cases and tools developed in ActionScript for all new and existing features, supporting h264 and all flash AV codecs and containers and streaming protocols: Progressive Download, Live Streaming, and Multi-Bit-Rate Streaming using a new multithreaded streaming architecture for Digital Home devices.
- Developed comprehensive test plan, test cases and media for new feature streaming Multi-Channel Audio, using DTS and Dolby codecs enabling partners and content providers to stream high quality audio over the Internet. Coordinated with several internal and external engineering teams.
- Created Performance test plan and test suite for benchmarking hardware-accelerated features.
- Reviewed/audited test plans and methodologies for entire system, identified areas of improvements.

**Computer Scientist**-Intelligent Documents Division

Sept-2007-Jan-2009

- Developed software to integrate two independent testing platforms together into a single distributed testing farm to install any chosen configuration of Acrobat or Reader software on a VMware Image with any OS specified and run any or all chosen test suites on those configurations. Communication between the Host, Controller and Slaves was done through SOAP calls using Perl.
- Assisted design of SQL tables to manage permutations of installing Acrobat/Reader on OS test farm.
- Lead Quality Engineering effort to ensure the Security model of embedding FlashPlayer within Acrobat and Reader. Developed ActionScript 2.0 and 3.0 test suites to ensure Flash in Acrobat and Reader enforced the Reader security model restrictions: Verified all relevant API's using Application, Web and Local File based Sandboxes which required different security restrictions.
- Developed and code-reviewed team members test suites in Java and C++ for Acrobat APIs.
- Technologies Used: Linux/Windows/Mac/VMWare, Adobe Flash ActionScript, C++, Perl/Python

DAZ 3D Draper, UT

Jun-2007 - Sept 2007

**Sr. Software Engineer,**

- Developed portions of Adobe Photoshop bridge plug-in for DazStudio 3D using C++
- Developed Engineering Requirement Specs for enhancements to products.

ACCESS SYSTEMS, INC / (Formerly Palm/PalmSource) Sunnyvale, CA,

July-1999 May-2007

**Sr. Software Engineer, Wireless Applications**

- Developed portions of user interface for an email application providing new commercial product developed from the ground up based on UI/UX requirements.
- Developed portions of tool to assist in creation of email accounts and emails used for engineering and testing.
- Conferred with worldwide team of engineers in (Japan/France/Sunnyvale/China) to design system capabilities to ensure performance requirements and interfaces.

- Managed recruiting new engineering talent, including contracting external recruiters that resulted in streamlining hiring process.

**Sustaining Software Developer and Professional Services experience includes:**

- Supported Palm OS licensees with technical knowledge and services to integrate our products.
- Modified several existing versions of Palm OS System (3.0–6.1) software to correct embedded errors, adapting to new licensee hardware and improving performance.
- Investigated root cause, diagnosed and solved numerous generic embedded OS bugs in many layers of the OS and provided sustaining releases, unit tests and enhancements with rapid release.
- Implemented feature requests for our Licensees

**Software Engineer in quality experience includes:**

- Developed automated test suites for Palm OS system software throughout the software stack from low level, middleware and higher level APIs in C and Java.
- Converted and responsible for all Palm OS 5 compatibility test suites on Palm OS 6.
- Completed diagnostic bring-up work on 4 hardware reference platforms for Palm OS 6 & Linux.
- Audited System test suite coverage and documented areas for needing improvement.
- Ensured quality for Palm OS (Emulator, Simulator and Debugger) on Mac, Windows and Linux.

ADOBE SYSTEMS, INC. San Jose, CA

Jun 1997 – Sept 1998

**Computer Scientist**-Graphics Products Division

- Modified existing Photoshop plug-ins to fix bugs.
- Upgraded and enhanced build process for 130+ Photoshop plug-ins for both Mac and Windows.

APPLE COMPUTER INC. Cupertino, CA,

Jun 1992 – May 1997

**Software Engineer**, PowerBook Software Division

1996-1997

**PowerBook System Software engineer designing and developing device drivers**

Developed a new PowerBook CPU Project with small team, using C and 68K assembly language.

- Improved the power management architecture to extend the battery life
- Involved in developing next generation sleep research project to be integrated into future OS.
- Instrumental in bringing up new OS builds on various PowerBook models with different hardware architecture, maintaining a working system with latest build and integrated components, as well as integrating hardware-specific PowerBook modules.
- Developed keyboard and track-pad device driver plug-ins.
- Assisted in porting Power Management to microkernel OS.
- Maintained the build environment and integrated PowerBook sources and Desktop projects.

**Sr. Software Configuration & Release Management Engineer**

Jun 1992-1996

- Technical Lead, energetically supported release of system software and firmware projects for over twenty CPU releases for Desktop, Consumer and Portable Divisions.
- Dedicated to projects through the entire development process from the initial planning and concept phases through releasing GM version to Manufacturing and localization and archiving.
- Coordinated, communicated and drove projects with people across divisions: Engineering Tech Leads, Component Leads, Project Managers, Tech Writers, QA, streamlined process
- Met high-pressure deadlines to deliver 4 to 6 ROM and System Software Projects per year.

EVANS AND SUTHERLAND COMPUTER CORP. Salt Lake City, UT

Jun 1989 - Jun 1992

**Software Configuration Manager:** High Performance Real-Time Simulation Division

- Developed numerous tools using C on VAX/VMS system to automate source code management.
- Managed Source code trees for all their high performance Real-Time Software.