Résumé of Flash (K. J.) Sheridan

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Summary

Over twenty years experience in software quality assurance, including four in static analysis; two years experience in software development. Skilled at finding, reporting, and tracking software bugs, via whitebox testing, test harness development, user-level testing, load testing, and static analysis. Published authority on compiler testing and static analysis.

Skills

Software quality assurance, automated testing, static analysis, embedded systems, GCC, LLVM/Clang, Xcode, C/C++, Lisp, Perl, Python, Swift, Coverity, Klocwork, Ethereum blockchain, Git, sh/tcsh/bash/zsh, Jenkins, HTML, LaTeX, TCP/IP, Linux, Macintosh, Windows.

Employment

2022– Matter Labs. Senior Compiler Test Engineer.
Testing of an LLVM-based compiler for a zero-knowledge-proof Ethereum Virtual Machine.

2021–2022 Mythic AI. Compiler software quality assurance engineer.
Testing of tools for an Analog Matrix Processor coupled to a RISC-V CPU for edge machine learning, via Docker and Bazel. Static analysis with Coverity via GitHub Actions and Python.

2018–2020 Axoni. Compiler quality assurance lead.
Tested the Axoni compiler for AxLang, a new Scala-based language for blockchain smart contracts. Created Python test harness and unittest tests, and set up Jenkins continuous integration.

2017 Bloomberg L.P./Open Systems Technologies, Inc.† Software engineer in test.
Implemented and evangelized software quality best practices in financial software: continuous integration, automated test validation, and static analysis.

2012–2015 Apple. Compiler quality engineer.
Testing of Swift and the LLVM/Clang compiler/static analyzer via a Python test harness; wrote the first Swift test plan. Filed bugs in an internal database against compilers and the Xcode development environment; evaluated and reduced bugs filed in the public LLVM/Clang Bugzilla database. Test lead for the Apple Command Line Tools. Added validation tests to the open source Swift compiler unit tests. Wrote GUI automation tests for the Xcode IDE.

2011–2012 Bell Labs/Alcatel-Lucent.† Software security static analyst.
Static analysis using Coverity and Klocwork for the detection of security vulnerabilities in mobile telephony infrastructure.

2009–2010 Qualcomm/Code Integrity Solutions.† Senior consultant.
Static analysis using Klocwork, PC-lint, and Coverity for the detection of bugs and security vulnerabilities in mobile telephony software. Evaluated and compared competing static analysis tools.

1998–2009 Palm/PalmSource.† Test programmer.
Senior Quality Lead for the PalmSource ARM-native compiler; no bugs in the compiler were reported after its release, and an account of my testing methodology was published by a leading academic computer science journal; see "Publications." Corrected Coverity integration with existing build system to improve automated detection of software defects; diagnosed analysis failures; adjusted analysis options to increase relevance and quantity of defect reports. Implemented reporting system to track responsibility for detected defects, which resulted in hundreds of bugs being fixed.

1995–1997 Apple.† Test programmer.
Low-level Quality Lead, Newton MessagePad 2100. API Quality Lead, eMate 300. Low-level Quality Lead for an unreleased POP/SMTP client. Maintained and extended test harness for automated API and user-level testing. Developed test program for Newton Backup Utility data integrity. As semi-official Usenet representative, handled third-party bug reports, user data collection, rumor management, and spin control.

† Contractor or contractor to employee

1986–1989 The University of London. Research assistant, inference under uncertainty. Writings on Artificial Intelligence, listed below.

iPhone Software (Objective-C)

EncycloClip. A faceless app to expedite search in the Encyclopedia Britannica web site.

Palm OS Software (CodeWarrior C)

Small Talk 1.02 & Japanese Language Module (LandWare). Added support for Japanese OS extension; supervised and implemented translation of phrase database into Japanese.

Newton Software (NewtonScript)

KwikMenu™ (LandWare). Provided immediate, universal menu access to a variety of common tasks. Reviewed in *NewtNews* February 1996, *Gecko* April 1996, and *Pen Computing* May 1996. Gecko rating: 4½ out of 5.

Register (Kagi). Allowed a user to pay for software with a credit card via electronic mail; provided an API used by approximately 150 third-party packages.

URLCop (freeware). Provided an API to dispatch a URL to the appropriate application. Supported by Newtscape, Newt's Paper, pURL, and Shuffler.

Publications

"Deploying Static Analysis," cover story, *Dr Dobb's Journal,* July 2012.

"Static Analysis Deployment Pitfalls," short paper, IEEE Symposium on Software Reliability Engineering, 2010.

"Static Analysis in a Fallen World," talk at the Stanford University Computer Science Department, 2010.

"Practical Testing of a C99 Compiler Using Output Comparison," *Software: Practice and Experience,* 2007 [37] pp. 1475–1488.

"Access Linux Platform for Linux Geeks: an Introduction," PalmSource Developer Newsletter, 2006 [25].

"urlCop: Proposed Standard for Inter-Application URL Handling," presentation, Apple Newton Developer Conference, 1996.

"A Survey of Techniques for Inference under Uncertainty," *Artificial Intelligence Review,* 1991 [5] pp. 89–119.

Three articles in *Non-Standard Logics for Automated Reasoning,* Academic Press, 1988, edited by Phillipe Smets, E.H. Mamdani, and Didier Dubois.

"A Variant of Church's Set Theory with a Universal Set in which the Singleton Function is a Set," *Logique et Analyse,* 2016 [59].

"Fixing Frege's Set Theory," talk at the Stanford University Mathematics Department, 2014.

Education

Balliol College, University of Oxford. Thesis for a doctorate in mathematical logic completed and published by *Logique et Analyse.* The results are summarized in sections 4.1 and 4.3 of *Set Theories with a Universal Set,* by T.E. Forster (Oxford Logic Guides 20, Clarendon Press, Oxford, 1992).

Yale University. B.A., Mathematics and Philosophy. Anthony D. Stanley Award for Excellence in Pure and Applied Mathematics.

Phillips Exeter Academy. Graduated *cum laude.*

Languages

Latin, Greek, French (fair), Russian (fair), German (fair).

User and Developer Groups

I was webmaster and co-founder of the Stanford Newton/iPhone User Group from 1994 to 2014, president and founder of the Stanford PalmPilot User Group from 1997 to 2009, chief judge for the PalmHack IV-VII programming contests, and founder of the LinkedIn Static Code Analysis Group.