

## EXPERIENCE

---

### Hewlett Packard Enterprise

San Jose, CA

Vice President & Chief Technologist, Hewlett Packard Labs

Mar 2015 - present

- **Management:** Team of program managers and strategist to support research programs & projects.
- **Play to Win Strategy Development:** Disruptive Development, Aura Zero Trust Framework, High Performance Computing & Trustworthy AI strategies.
- **Governance Process:** Stage-gate model to manage disruptive research projects & existing programs.
- **Information Repository:** Automated and self-service BI based system for tracking programs & projects.
- **Advisory Board:** Created an executive level business & technical experts to advise on research activities.
- **Investments & Acquisitions:** Drove the acquisition of Simplivity, Quattro Networks and Plexxi. Created the partnership with Platform9.
- **Workloads as a Service:** Architecture that provided the ability for application workload execution brokering to the appropriate execution domain, across physical hosts, virtual machines or containers.
- **HyperConverged:** Devised multiple architecture strategies to enter the HCI market, finalized by the acquisition of Simplivity.
- **Technical Career Path:** Chair of two division technical promotion boards. Member of corporate Fellow/Senior Fellow promotion board.

### VMware

Palo Alto, CA

Chief Architect, Software Defined Data Center Business Unit

Jan 2012 - Mar 2015

- **Management:** 30 person Platform Security Engineering & 500 person Global Quality Engineering teams.
- **Business Development:** Application of virtualization in the automotive, IoT, industrial & entertainment markets.
- **Secure Thin Hypervisor:** Bare metal hypervisor for Cloud Native Application development & server management.
- **Security Response Center:** Tools & processes to reduce likelihood of vulnerabilities & their impact to customers.
- **CVSS for Virtualization:** Revised scoring system that better categorized vulnerabilities.
- **Security Score Cards:** Engineering wide, consistent model to measure individual products against a common set of security objectives.
- **Security Education/Training:** World-wide engineering formal & informal training programs for 5,000 engineers.
- **Capital Savings:** Company wide infrastructure inventory and reservation system that eliminated \$5M/year capital expense.
- **Predictive Analytics:** Tools that improved testing estimations, eliminated duplicative & identified testing gaps.
- **CQE Alignment:** Realigned System & Functional QA to development teams that improved production, increase collaboration & decrease duplication.

Chief Technology Officer for Worldwide Public Sector, Office of the CTO

Sep 2008 - Dec 2011

- **Business Growth:** Evangelism contributed to growing the US Federal business from \$50M to \$500M.
- **Cloud Computing:** Member of National Institute of Standards effort to develop SP-500 series.
- **IPv6:** Drove the prioritized implementation of IPv6 in products to meet US Federal requirements.
- **High Assurance Platform:** Moved the multi-level security domain system product from a customized hypervisor to a commercial version of VMware Workstation, including federal security assurance requirements.
- **Secure Hypervisor:** Led the development of a prototype of a highly secure bare metal client hypervisor. Client platform leveraged functionalities, scalability and stability of ESX while preserving device compatibility of a legacy desktop system.

Director of Engineering, Ecosystems Engineering

Nov 2004 - Sep 2008

- **Management:** 70 person world-wide engineering organization working with OEMs and IHVs.
- **Hardware Compatibility List:** Transitioned from static documents to a public facing database driven website
- **OEM Preferred Operating System:** New versions of vSphere supported at release by all major system OEMs.
- **Certification Suite:** An automated testing suite that increased the number of supported servers and storage arrays to over 2000 & 200 devices respectfully.
- **Security Certifications:** Achieved Common Criteria EAL 4 and FIP-140-2 cryptographic certifications.

## SQU Systems

Palo Alto, CA

Software Consultant

Sep 2001 - Nov 2002

Early stage startup working on “Software Hot Swapping” technology to patch and replace sections of a running operating systems. Effort was moved off-shore and shutdown.

## Compaq Computer Corporation

Palo Alto, CA

Director Software Engineering, Advanced Technologies Group

Jan 1998 - Sep 2001

- **Management:** 20-person, multi-location engineering organization within the corporate research organization
- **Digital Continuous Profiling Infrastructure:** Developed image manipulation library for Windows NT, both Intel and Alpha architectures.
- **Dynamic Optimizer:** A prototype dynamic optimization system for TRU64 Unix and Windows NT/Alpha.
- **Post-link Static Optimizer Environment:** A Linux integrated performance & analysis tool development environment for Linux.
- **Hardware Adaptable Images:** Dynamic binary modification of executables based upon available hardware.

## Digital Equipment Corporation

Palo Alto, CA

Senior Software Engineering Manager, Alpha Migration Center

Jan 1990 - May 1998

- **Management:** Managed department consisting of 5 managers, 80 full-time and contract engineers, involved in supporting the migration and co-engineering of applications to OpenVMS, TRU64 Unix and Windows NT for Alpha.
- **NT-Atom:** Delivered two major and several minor releases of the NT-Atom Binary Instrumentation and Analysis Framework Application product.
- **Database Competency Center:** Managed a team of database & performance software engineers that worked with the major database vendors to achieve leadership TCP Benchmark results.
- **Windows NT Competency Center:** Managed a team of software engineers embedded within Microsoft to support the development of applications on the Windows NT for Alpha platform.
- **Patchwrks:** Research tool that constructed full instruction stream traces of the operating system and applications running on a processor or multiprocessor system.

Principal Software Engineer

Mar 1983 - Jan 1986

- **Alpha Architecture:** Drove the adoption and implementation of adding byte and word instructions in the Alpha Architecture.
- **Fat Binaries:** Invented a method to allow for optimization and execution of applications for different generations of instruction set architectures. Implemented on Windows NT/Alpha that resulted in up to 50% application performance improvement.
- **EPA GIS System Integration Program:** Led a 10-person team in developing all technical deliverables for the RFP, Live Test Demonstration and contract modifications for the successful \$140 million contract win.
- **CHAMPVA:** Lead software developer of the claims processing system for the Civilian Health & Medical Program of the Department of Veterans Affairs. Developed several device drivers, imaging scanning software and installation subsystem. Developed in C and assembler.

- **NASA Space Station:** Designed the Integration, Test, Verification and Execution and Avionics Development Facility computer system for RFP and subsequent award. Built prototype interface module for communicating with the multitude of communication busses on the simulator. Code was written in a mixture of ADA, FORTRAN, C and VAX assembler.

Hardware Engineer, Laboratory Data Products

Jun 1983 - Aug 1986

- **Information Transport System Decision Support System:** Prototype multimedia workstation. Developed the calendar subsystem, security system (hardware and software), graphics subsystem and applications API library. Developed in FORTRAN.
- **VAXLab User Management System:** Software for automating the management of VAX/VMS systems. Developed in DCL and BLISS-32.
- **Laboratory Information Management Systems:** Developed software and API library set for graphing data from various laboratory instruments in real-time. Developed in C, FORTRAN and Pascal.

## United States Navy

Various

Naval Reserve Officer

Sep 1985 - Dec 2016

Led organizations from 25 to 1000+ personnel across multiple disciplines including surface operations, communications, computer technology, intelligence and security. Commanded 7 different units. Served on active duty from Aug 1986 to Mar 1990, Dec 2002 to Nov 2004

## VOLUNTEER EFFORTS

Trustee, Naval War College Foundation	2018 - present
VMware Partner Advisory Board	2019 - present
Northeastern University, College of Electrical & Computer Engineering Advisory Board	2006 - present
National University, Cyber Security and Information Assurance Advisory Council	2010 - 2013
U.S. Secretary of the Navy, National Naval Reserve Forces Policy Board	2005 - 2008

## PATENTS

- **US 6470493:** Computer method and apparatus for safe instrumentation of reverse executable program modules.
- **US 6115550:** Loader conditionally replacing a code sequence with a functionally-alike code sequence in an executable program intended for execution indifferent run-time environments.
- **US 6470493:** Computer method and apparatus for safe instrumentation of reverse executable program modules.
- **US 5920721:** Compiler generating functionally-alike code sequences in an executable program intended for execution in different run-time environments.

## EDUCATION

Joint Staff College at National Defense University	Jun 2004
Diploma (Master of Arts equivalent) in Operational Planning	
United States Naval War College	Jun 1998
Diploma (Master of Arts equivalent) in Defense and Strategic Studies	
Northeastern University	Jun 1986
Bachelor of Science in Electrical and Computer Engineering	