

## Summary

Software Architect and a technologist with a broad and deep background in Data Center Infrastructure, Virtualization, Distributed Systems, Networking, Machine Learning and Big Data. A passion for innovating from the ground up to envision and build scalable infrastructure products and deliver successful customer outcomes. Experienced at building and leading strong consensus driven technical teams with an ability to work seamlessly across cross-functional disciplines for achieving product success and strategic business objectives.

## UC Berkeley, MIDS , Jan 2019 - Sep 2020

As a graduate student ventured out back to school to explore data science and machine learning. The academic projects below highlight some of the work.

- [Understand challenges of Generalization in Natural Language Models](#)
- [Apply NLP Semantic Similarity using Neural Models to Programming Q&A](#)
- [Click Through Rate Prediction on a Spark Big Data pipeline](#)
- [Home Price Prediction](#)
- [Edge Image Detection on NVIDIA Jetson](#)
- [Crime Rate Analysis using Classic Linear Models](#)

## VMware, Palo Alto, CA, Apr 2011 - Jan 2020

Lead Architect and founding member for Smart Fabrics Director (SFD) in the Networking and Security Group (NSBU). [Smart Fabrics Director](#) provides an intent driven networking fabric manager for a datacenter network underlay.

- Key Responsibilities included defining the product architecture and implementation, build and lead engineering development teams, collaborating with business and technical stakeholders to drive product execution and strategy
- Declarative intent driven architecture for operational simplification of fabric orchestration and management
- Streaming Data Pipeline for telemetry and time-series data for network fabric monitoring and analytics
- A distributed and modular service oriented cloud native architecture for scalability
- Openconfig based implementation for interoperability
- Integration with NSX network overlay and vCenter server
- Developed components of the product including fabric orchestration and the data pipeline to support telemetry and monitoring operations of the network underlay
- Other responsibilities included technical and product reviews, engineering mentorship and customer interactions for product feedback and working with industry partners for collaboration on network manageability using openconfig

Architect and founding member for the [Software Defined Datacenter \(SDDC\) manager](#) platform in the VMware cloud foundation group (VCF). SDDC manager provided the first hyper-converged rack(s) as a hybrid-cloud solution for an enterprise. Using a VMware software stack for compute, storage and network virtualization and multi-vendor server and network hardware.

- Key Responsibilities included defining and implementing product architecture, leading engineering development teams, working closely with hardware partners and product stakeholders
- Defined system architecture for a distributed SDDC manager
- Developed system software for the core platform to run SDDC manager services
- Designed and developed a System Controller to bootstrap and manage the SDDC system
- Designed VCF System Health: The objective was to define, observe, and maintain desired state behavior of all the components of the VCF converged system
- Defined and developed a Hardware Manageability Architecture for Compute, Network and Storage hardware
- Architect the next generation of manageability software for composable data center hardware platforms such as Intel Rack Scale
- VMware Technical Representative and co-chair for a joint standardization as part of [DMTF Redfish](#) effort for managing modern data center hardware and composable systems.

Software Engineer in the ESXi VMKernel Group. VMKernel is the foundational component of the ESXi hypervisor

- Architect and lead developer for a research paper published internally called [VMware Network Operating System \[vNOX\]](#) which involved integrating physical and virtual networks in a unified controller
- Engineering lead and developer for a native driver initiative for VMKernel network stack.
- Designed and developed the native VMxnet3 driver in the VMKernel
- Lead VMware representative on collaboration projects with Cisco UCS

## **Force10 Networks (Acquired by Dell), San Jose, CA, Feb 2002 - Apr 2011**

Senior Architect in the Systems Architecture Team (CTO Office) responsible for designing emerging switch/router platforms.

- Responsibilities included research and analysis of emerging hardware and software platforms for building the emerging generation of product lines and defining platform software requirements and architecture
- Developed an architecture specification for an operating system using a virtual control and data plane for a distributed chassis based switch platform built using x86/Broadcom/Xen/BSD components
- Collaborated with the industry partners (NetBSD foundation, Intel) for adding virtualization support

Lead Engineer and Architect for Platform and Operating System Development

- Led the board and platform bringup of network switches including boot code, BSD kernel, network drivers and chipsets
- Migrated network operating system from a monolith RTOS to a modular service oriented architecture
- Built tools and infrastructure services for IPC, Shared Memory, Dynamic Code Patching, Process Management

## Software Engineer Networking

- Designed and implemented a Layer-2 VPN solution based on VPLS RFC 4762 standards
- Designed and implemented QoS infrastructure for network QoS

## **Shasta Networks (Acquired by Nortel), San Jose, CA, May 2000 - Feb 2002**

Software Engineer in the Security group. Primary responsibilities included design and development of security and VPN technologies for the broadband edge gateway.

- Designed and developed a Layer 3 IPSec VPRN implementation based on IETF RFC 2764 standards. The distributed VPRN implementation primarily deployed in service provider networks entailed building a secure VPN mesh using multiple edge nodes for subscriber secure transport.
- Designed PKI support in IKE for the Shasta 5000 edge gateway

## **IBM, Austin, TX, Jun 1998 - May 2000**

Software Engineer in the AIX RS6000 Security Group

- Implemented IPSEC and IKE protocol components
- Worked on X.509 and XAUTH related support in IKE

## **Education**

- Master of Information in Data Science, University of California, Berkeley, Sep 2020
- MS Computer Science, Western Michigan University, Jun 1998