PRANSHU JAIN

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Professional Experience

VMware by Broadcom Aug 2023 – Present
R&D Engineer Software 6 (Senior Principal Architect) *Palo Alto, CA*

- Primary technical authority and lead architect for vSphere Application QoS, defining the architecture and roadmap for mission-critical resource-management and scheduling systems.
- Formulate the global technical roadmap for vSphere, the core engine supporting more than 70 million virtualized workloads across enterprise data centers worldwide.
- Spearheaded GPU and hardware-accelerator resource management for VMware Cloud Foundation (VCF), extending platform support for modern cloud and AI workloads.

VMware Inc. Mar 2016 – Aug 2023
Staff / Senior Software Engineer *Palo Alto, CA*

- Led architecture across vSphere Distributed Resource Scheduler (DRS), Kubernetes integration, vSphere Clustering Services (vCLS), and the VCF Supervisor platform.
- Built declarative control planes and high-availability scheduling for cloud-native workloads, including native orchestration between Kubernetes and vSphere.

Publications, Research Service & Recognition

- Senior author of *Building scalable and flexible cluster managers using declarative programming* at the 14th USENIX Symposium on Operating Systems Design and Implementation (OSDI 2020).
- Served for eight years as a Technical Program Committee member and reviewer for RADIO, VMware by Broadcom's international R&D conference, selected through a highly selective process and helping maintain an acceptance rate below 7%.
- Authored 13 proprietary RADIO research papers (2017–2022); received the Best Paper and Research Talk Award (2021) at RADIO, which drew 20,000+ global participants from 10+ countries; also invited to present original research at VMworld 2019 to 100+ global customers.

Patents & Technical Contributions

- 11 U.S. patent assets (9 granted, 2 pending) in workload scheduling, container orchestration, connectivity-aware placement, and multi-resource management.
- Representative inventions include containerized workload scheduling, unified resource management for containers and virtual machines, scheduling across multiple independent schedulers, and workload placement based on connectivity.
- Technical contributions underpin declarative cluster management, vSphere Clustering Services, and VMware's cloud-native platform capabilities.

Impact of Original Research & Innovation

- Declarative Cluster Management (OSDI '20): research on declarative cluster management optimized global server balancing and influences management of millions of virtual machines.
- VCF Supervisor and Kubernetes integration: helped architect native integration of Kubernetes into vSphere for modern cloud-native platforms.

Education & Foundational Research

Georgia Institute of Technology, Atlanta, USA Aug 2014 – Dec 2015
Master of Science in Electrical and Computer Engineering *GPA: 4.00/4.00*

Netaji Subhas Institute of Technology, University of Delhi, India Aug 2010 – May 2014
Bachelor of Engineering in Electronics and Communication *GPA: 3.93/4.00*

NSIT Research Intern - Supervised by Dr. M.P.S. Bhatia, New Delhi, India Feb 2013 – May 2014
Conducted independent research on hardware security of embedded systems against side-channel power-analysis attacks and implemented attack models to validate vulnerabilities in the Advanced Encryption Standard (AES).