

# PRANSHU JAIN

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## Professional Experience

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**VMware by Broadcom**  
*Senior Principal Engineer*

Aug 2023 – Present  
Palo Alto, CA

- Lead the architecture and technical roadmap for resource management and application QoS in VMware Cloud Foundation, governing the state, lifecycle, and placement of 80M+ virtualized workloads across global enterprise data centers.
- Architect the orchestration between Kubernetes and VCF schedulers to ensure optimal resource assignment to workloads at high scale, while enforcing user-defined policies and maximizing infrastructure utilization.
- Design a multi-resource scheduling model that integrates CPU, memory, storage and hardware accelerators into a common currency for scheduling virtual machines and containers in VCF.
- Invented new abstractions to express GPU requirements of AI workloads declaratively, and new algorithms for placing workloads to specifically avoid GPU fragmentation.

**VMware Inc.**  
*Staff Engineer*

Mar 2016 – Aug 2023  
Palo Alto, CA

- Led architecture for vSphere Distributed Resource Scheduler (DRS), vSphere Clustering Services (vCLS), and Kubernetes–vSphere integration through the VCF Supervisor platform.
- Designed a new declarative control-plane for defining and enforcing QoS policies in VMware Cloud Foundation that seamlessly integrates with the Kubernetes APIs, replacing the existing imperative system.
- Invented new algorithms and constructs for improving the placement of virtual disks on datastores; received the Top Talent Award for performance and scalability contributions.

## Research Service

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- **Program Committee Member**, 19th ACM International Systems and Storage Conference (SYSTOR 2026).
- **Program Committee Member**, 5th International Workshop on Real-Time and Cyber-Physical Cloud (RT-Cloud 2026), held in conjunction with ECRTS 2026.
- **Technical Program Committee Member**, RADIO (VMware’s flagship international peer-reviewed R&D conference), 2018–2023; reviewed submissions in distributed systems, cloud infrastructure, virtualization, cloud-native systems, performance, and reliability in a selective review process (acceptance rate below 15%).

## Publications & Recognition

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- **OSDI 2020**: Senior author of *Building Scalable and Flexible Cluster Managers Using Declarative Programming*, published at the 14th USENIX Symposium on Operating Systems Design and Implementation.
- **RADIO**: 13 accepted refereed industrial research papers (2017–2022), including *Kubernetes Policies Aware Resource Management* (Best Paper and Research Talk Award, 2021) and *vMotion of Containerized Workloads in vSphere* (Best Research Poster, 2023).
- **Invited talk**: *Deep Dive - Kubernetes Resource Management for vSphere Admins*, VMworld 2019.

## Patents & Technical Contributions

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- 11 U.S. patent assets (9 granted, 2 pending) in workload scheduling, container orchestration, unified resource management for containers and virtual machines, connectivity-aware placement, scheduling across independent schedulers, and multi-resource management.

## Education & Early Research

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**Georgia Institute of Technology, Atlanta, USA**  
Master of Science in Electrical and Computer Engineering

Aug 2014 – Dec 2015  
GPA: 4.00/4.00; Graduated *Summa Cum Laude*

**Netaji Subhas Institute of Technology, University of Delhi, India**  
Bachelor of Engineering in Electronics and Communication

Aug 2010 – May 2014  
GPA: 3.93/4.00

**Research Assistant, NSIT (DRDO-funded project), supervised by Dr. M.P.S. Bhatia, New Delhi, India** Feb 2013 – May 2014

Implemented software and experimental workflows for side-channel power-analysis attacks on AES smart cards, including a Hamming-weight attack model and VISA-based measurement setup; supported deployment and replication of the methodology with DRDO scientists.